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PREFACE.

The object of the following pages is to present the first principles of Arithmetic in a simple and practical manner, without theorizing upon them.

It has been too much the fashion of late to attempt the development of the reasoning powers in children of tender years. Nature dictates a different course. The perceptive faculties are in full vigor during childhood, whilst the ability to reason is slow of growth, and seldom capable of rapid development early in life without risk of serious injury.

Oral and Written exercises are presented on alternate pages in this book, and the various combinations of numbers, under the fundamental rules, have been so arranged as to make the pupil who masters them thoroughly familiar with the subject, and entirely fit to continue the study in a higher grade. It is too often the case that pupils are to be found dragging along through problems in the higher branches, who cannot perform with quickness and accuracy examples in addition.

Illustrations and explanations have been left to the teacher, this being emphatically intended for a working *text-book,* and not a pictured *play-book.* We hold that there are no means of gaining a proper knowledge of this or any other science save constant labor and practice.

S. M.
G. M. S.

Philadelphia, 1877.

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THE

NEW AMERICAN ARITHMETIC.

PART I.

NOTATION AND NUMERATION.

LESSON 1.

IN Arithmetic we must first learn to read and write numbers.

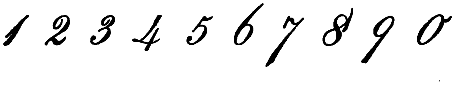
This sign = is read *equal* or *equals*.

Note.—**The teacher should place this and other signs, as they occur, on the blackboard and explain them.**

Naught = 0.

One = 1.
Two = 2.
Three = 3.
Four = 4.
Five = 5.
Six = 6.
Seven = 7.
Eight = 8.
Nine = 9.
Ten = 10.
Eleven = 11.
Twelve = 12.
Thirteen = 13.
Fourteen = 14.
Fifteen = 15.
Sixteen = 16.
Seventeen = 17.
Eighteen = 18.
Nineteen = 19.
Twenty = 20.
Twenty-one = 21.
Twenty-two = 22.
Twenty-three = 23.
Twenty-four = 24.
Twenty-five = 25.
Twenty-six = 26.
Twenty-seven = 27.
Twenty-eight = 28.
Twenty-nine = 29.
Thirty = 30.

WRITTEN FIGURES.



LESSON 2.

Write on the slate or blackboard the figures that stand for the following numbers:—

Two. Five. Six. Fourteen. Twenty-eight.
Nine. Twelve. Three. Fifteen. Twenty-two.
Thirteen. Eight. Four. Twenty. Ten. One.
Twenty-five. Naught. Twenty-three. Seventeen.
Twenty-four. Sixteen. Nineteen. Twenty-nine.
Eighteen. Eleven. Twenty-six. Twenty-one.
Seven. Twenty-seven. Thirty.

Write the names of the following numbers:—

1 3. 5. 7. 9. 11. 13. 15. 17. 19.
2. 4. 6. 8. 10. 12. 14. 16. 18. 20.
21. 23. 25. 27. 29. 22. 24. 26. 28. 30.

1. 3. 5. 7. 9. 11. 13. 15. 17. 19.
2. 4. 6. 8. 10. 12. 14. 16. 18. 20.
21. 23. 25. 27. 29. 22. 24. 26. 28. 30.

Note.—The pupils should now be thoroughly drilled in writing numbers on the slate and blackboard. In fact, too much effort cannot be made to attain perfection in the fundamental rules. It is the only *sure* foundation on which to base a full, thorough knowledge of Arithmetic.

LESSON 3.

Thirty = 30.
Thirty-one = 31.
Forty = 40.
Forty-two = 42.
Fifty = 50.
Fifty-three = 53.
Sixty. = 60.
Sixty-four = 64.
Seventy = 70.
Seventy-five = 75.
Eighty = 80.
Eighty-six = 86.
Ninety = 90.
Ninety-nine = 99.
One hundred = 100.

Write the figures that stand for the following numbers:—

Thirty. Thirty-eight. Forty-two. Forty-nine. Fifty-five. Sixty-seven. Seventy. Seventy-three. Seventy-eight. Eighty-nine. Ninety. Ninety-nine. One hundred.

Write the names of the following numbers:—

31. 36. 40. 44. 51. 59. 63. 64.
70. 76. 80. 85. 91. 94. 95. 96.
65. 88. 72. 38. 41. 54. 62. 100.

Note.—Believing that no formal directions can as fully instruct the child in the methods of *carrying, borrowing, long* and *short division,* etc. as the living voice of the faithful instructor, no attempt has been made in the following pages to supplant the teacher. Hence, the pupil has plenty of *work* given, and no *theory.* Practice first, theory afterwards, has been the aim throughout.

ADDITION.

ORAL EXERCISES.

LESSON 4.

1 and 1 are 2.
1 and 2 are 3.
1 and 3 are 4.
1 and 4 are 5.
1 and 5 are 6.
1 and 6 are 7.
1 and 7 are 8.
1 and 8 are 9.
1 and 9 are 10.
1 and 10 are 11.

2 and 1 are 3.
2 and 2 are 4.
2 and 3 are 5.
2 and 4 are 6.
2 and 5 are 7.
2 and 6 are 8.
2 and 7 are 9.
2 and 8 are 10.
2 and 9 are 11.
2 and 10 are 12.

This sign + is read *plus;* it means *more,* and it shows that the numbers between which it is placed are to be added.

1. How many are 4 and 1? 6 and 1? 8 and 1?
2. $2+2$? $2+3$? $2+4$? $2+5$? $2+6$?

$1+1=2.$
$2+1=3.$
$3+1=4.$
$4+1=5.$
$5+1=6.$
$6+1=7.$
$7+1=8.$
$8+1=9.$
$9+1=10.$
$10+1=11.$

$1+2=3.$
$2+2=4.$
$3+2=5.$
$4+2=6.$
$5+2=7.$
$6+2=8.$
$7+2=9.$
$8+2=10.$
$9+2=11.$
$10+2=12.$

WRITTEN EXERCISES.

LESSON 5.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)
1	1	1	1	1	1
2	3	4	5	6	7

(*7.*)	(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)
1	1	1	2	2	2
8	9	10	1	2	3

(*13.*)	(*14.*)	(*15.*)	(*16.*)	(*17.*)	(*18.*)
2	2	2	2	2	2
4	5	6	7	8	9

(*19.*)	(*20.*)	(*21.*)	(*22.*)	(*23.*)	(*24.*)
2	3	3	4	5	6
10	1	2	2	2	2

(*25.*)	(*26.*)	(*27.*)	(*28.*)	(*29.*)	(*30.*)
7	8	9	10	9	8
2	2	2	2	1	1

31. 6 men + 2 men = how many men?

32. 8 pens and 2 pens are how many pens?

33. 10 birds and 2 birds are how many birds?

34. 5 hats + 2 hats = how many hats?

35. 2 + 5 = how many? 2 + 6 are how many?

36. 1 and 10 are how many? 10 + 1 = how many?

ORAL EXERCISES.

LESSON 6.

3 and 1 are 4.
3 and 2 are 5.
3 and 3 are 6.
3 and 4 are 7.
3 and 5 are 8.
3 and 6 are 9.
3 and 7 are 10.
3 and 8 are 11.
3 and 9 are 12.
3 and 10 are 13.

4 and 1 are 5.
4 and 2 are 6.
4 and 3 are 7.
4 and 4 are 8.
4 and 5 are 9.
4 and 6 are 10.
4 and 7 are 11.
4 and 8 are 12.
4 and 9 are 13.
4 and 10 are 14.

1. 1 and 3 are how many? 2 and 3? 2 and 4?
2. 3 and 3 are how many? 3 and 4? 3 and 5?
3. 4 and 4 are how many? 5 and 4? 6 and 4?
4. $4+8=$ how many? $4+9$? $8+4$? $9+4$?
5. $3+10=$ how many? $10+3$? $3+7$? $7+3$?
6. 4 boys and 5 boys are how many boys?

$1+3=4.$
$2+3=5.$
$3+3=6.$
$4+3=7.$
$5+3=8.$
$6+3=9.$
$7+3=10.$
$8+3=11.$
$9+3=12.$
$10+3=13.$

$1+4=5.$
$2+4=6.$
$3+4=7.$
$4+4=8.$
$5+4=9.$
$6+4=10.$
$7+4=11.$
$8+4=12.$
$9+4=13.$
$10+4=14.$

WRITTEN EXERCISES.

LESSON 7.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)
3	3	3	3	3	4
3	5	7	8	10	1

(*7.*)	(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)
4	4	4	7	8	9
2	4	6	4	4	4

(*13.*)	(*14.*)	(*15.*)	(*16.*)	(*17.*)	(*18.*)
1	2	1	4	5	6
2	2	3	3	2	3
3	2	2	1	1	1

(*19.*)	(*20.*)	(*21.*)	(*22.*)	(*23.*)	(*24.*)
2	1	3	2	3	8
2	3	4	6	5	2
6	7	4	3	4	2

25. How many are $10+4$? $9+4$? $8+4$?

26. $2+4+4=$ how many?

27. $4+4+4=$ how many?

28. How many are 3 and 3 and 3?

29. A hat cost 4 dollars, and a coat 9 dollars; how much did they both cost?

30. $3+2+1=$ how many? $4+3+2$?

31. Add 7 cents and 3 cents.

32. What is the sum of $6+4+2$?

ORAL EXERCISES.

LESSON 8.

5 and 1 are 6.
5 and 2 are 7.
5 and 3 are 8.
5 and 4 are 9.
5 and 5 are 10.
5 and 6 are 11.
5 and 7 are 12.
5 and 8 are 13.
5 and 9 are 14.
5 and 10 are 15.

6 and 1 are 7.
6 and 2 are 8.
6 and 3 are 9.
6 and 4 are 10.
6 and 5 are 11.
6 and 6 are 12.
6 and 7 are 13.
6 and 8 are 14.
6 and 9 are 15.
6 and 10 are 16.

1. 5 and 1 are how many? 5 and 2? 5 and 3?
2. 5 and 4 are how many? 5 and 5? 5 and 6?
3. 6 and 2 are how many? 6 and 4? 6 and 6?
4. $6+5=$ how many? $5+6$? $6+7$? $7+6$?
5. $6+8=$ how many? $8+6$? $9+6$? $6+9$?
6. 10 dollars + 6 dollars are how many?

$1+5=6$.
$2+5=7$.
$3+5=8$.
$4+5=9$.
$5+5=10$.
$6+5=11$.
$7+5=12$.
$8+5=13$.
$9+5=14$.
$10+5=15$.

$1+6=7$.
$2+6=8$.
$3+6=9$.
$4+6=10$.
$5+6=11$.
$6+6=12$.
$7+6=13$.
$8+6=14$.
$9+6=15$.
$10+6=16$.

WRITTEN EXERCISES.

LESSON 9.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)
5	5	5	5	5	5
4	5	6	5	5	7
3	4	3	5	3	3

(*7.*)	(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)
6	6	6	6	6	6
5	5	5	5	5	6
4	3	2	1	5	4

(*13.*)	(*14.*)	(*15.*)	(*16.*)	(*17.*)	(*18.*)
10	10	10	10	10	10
3	4	5	3	2	1
2	2	1	3	2	1

19. How many are $6+10$? $10+6$? $6+9$?

20. $6+6=$ how many? $3+6+1=$ how many?

21. James had 4 cents, his mother gave him 6, and his uncle 6; how many did he then have?

22. 6 peaches in one pile, 4 in another, and 5 in a third pile; how many peaches in all?

23. 3 hats + 2 hats + 5 hats = how many hats?

24. 5 dollars + 5 dollars + 5 dollars are how many dollars?

25. $6+8=$ how many? $2+2+6=$ how many?

ORAL EXERCISES.

LESSON 10.

7 and 1 are 8.
7 and 2 are 9.
7 and 3 are 10.
7 and 4 are 11.
7 and 5 are 12.
7 and 6 are 13.
7 and 7 are 14.
7 and 8 are 15.
7 and 9 are 16.
7 and 10 are 17.

8 and 1 are 9.
8 and 2 are 10.
8 and 3 are 11.
8 and 4 are 12.
8 and 5 are 13.
8 and 6 are 14.
8 and 7 are 15.
8 and 8 are 16.
8 and 9 are 17.
8 and 10 are 18.

1. 7 and 1 are how many? 7 and 2? 7 and 3?
2. 7 and 4 are how many? 7 and 5? 7 and 6?
3. 8 and 4 are how many? 8 and 5? 8 and 6?
4. $7 + 8 =$ how many? $8 + 7$? $9 + 7$?
5. $7 + 10$ are how many? $10 + 7$? $10 + 8$?
6. 8 caps and 8 caps are how many caps?

$1 + 7 = 8$.
$2 + 7 = 9$.
$3 + 7 = 10$.
$4 + 7 = 11$.
$5 + 7 = 12$.
$6 + 7 = 13$.
$7 + 7 = 14$.
$8 + 7 = 15$.
$9 + 7 = 16$.
$10 + 7 = 17$.

$1 + 8 = 9$.
$2 + 8 = 10$.
$3 + 8 = 11$.
$4 + 8 = 12$.
$5 + 8 = 13$.
$6 + 8 = 14$.
$7 + 8 = 15$.
$8 + 8 = 16$.
$9 + 8 = 17$.
$10 + 8 = 18$.

WRITTEN EXERCISES.

LESSON 11.

(1.)	*(2.)*	*(3.)*	*(4.)*	*(5.)*	*(6.)*
7	7	7	7	7	7
4	3	2	5	6	5
3	2	1	4	4	2

(7.)	*(8.)*	*(9.)*	*(10.)*	*(11.)*	*(12.)*
8	8	8	8	8	8
4	5	6	3	4	8
2	3	3	7	4	2

(13.)	*(14.)*	*(15.)*	*(16.)*	*(17.)*	*(18.)*
9	10	10	9	6	4
5	4	3	6	8	3
3	3	3	2	2	10

19. How many are $7+3+8$? $4+6+6$?

20. A slate cost 8 cents, a pencil 1 cent, and a primer 7 cents; how much did they all cost?

21. 10 cents for a book and 8 cents for a strap; how much do both cost?

22. $6+3+8=$ how many?

23. $4+4+10=$ how many?

24. $8+2+7=$ how many?

25. $2+7+8=$ how many?

26. $9+8=$ how many? $8+9=$ how many?

ORAL EXERCISES.

LESSON 12.

9 and 1 are 10.
9 and 2 are 11.
9 and 3 are 12.
9 and 4 are 13.
9 and 5 are 14.
9 and 6 are 15.
9 and 7 are 16.
9 and 8 are 17.
9 and 9 are 18.
9 and 10 are 19.

10 and 1 are 11.
10 and 2 are 12.
10 and 3 are 13.
10 and 4 are 14.
10 and 5 are 15.
10 and 6 are 16.
10 and 7 are 17.
10 and 8 are 18.
10 and 9 are 19.
10 and 10 are 20.

1. 9 and 2 are how many? 2 and 9? $9+3$?

2. $9+4=$ how many? $4+9$? $5+9$?

3. How many dollars are 10 dollars + 10 dollars? $10+8=$ how many?

4. 8 and 9 are how many? $9+8=$ how many?

5. $6+10=$ how many? $10+6$? $5+10$? $10+5$?

$1+9=10.$
$2+9=11.$
$3+9=12.$
$4+9=13.$
$5+9=14.$
$6+9=15.$
$7+9=16.$
$8+9=17.$
$9+9=18.$
$10+9=19.$

$1+10=11.$
$2+10=12.$
$3+10=13.$
$4+10=14.$
$5+10=15.$
$6+10=16.$
$7+10=17.$
$8+10=18.$
$9+10=19.$
$10+10=20.$

WRITTEN EXERCISES.

LESSON 13.

(1.)	*(2.)*	*(3.)*	*(4.)*	*(5.)*	*(6.)*
9	8	7	6	5	4
1	2	3	4	5	6
10	10	10	10	10	10

(7.)	*(8.)*	*(9.)*	*(10.)*	*(11.)*	*(12.)*
10	10	10	10	10	10
9	8	7	6	5	4
1	2	3	4	5	6

(13.)	*(14.)*	*(15.)*	*(16.)*	*(17.)*	*(18.)*
4	5	1	9	10	10
4	1	4	2	3	6
3	6	7	4	5	3
3	2	3	3	2	1

19. How many are $8+2+10$? $9+1+9$?

20. A barrel of flour cost me 10 dollars, and a cord of wood 8 dollars; it cost 2 dollars for hauling the wood; how much did I pay in all?

21. 9 cents for a kite, 1 cent for a pencil, and 10 cents for a copy-book; how many cents for all?

22. $7+2+10=$ how many?

23. $3+7+10$ are how many?

24. $4+6+9=$ how many?

ORAL EXERCISES.

LESSON 14.

1. How many are 1 + 3? 11 + 3? 21 + 3? 31 + 3? 41 + 3? 51 + 3? 61 + 3? 71 + 3? 81 + 3? 91 + 3?

2. How many are 2 + 4? 12 + 4? 22 + 4? 32 + 4? 42 + 4? 52 + 4? 62 + 4? 72 + 4? 82 + 4? 92 + 4?

3. How many are 3 + 5? 13 + 5? 23 + 5? 33 + 5? 43 + 5? 53 + 5? 63 + 5? 73 + 5? 83 + 5? 93 + 5?

4. How many are 4 + 6? 14 + 6? 24 + 6? 34 + 6? 44 + 6? 54 + 6? 64 + 6? 74 + 6? 84 + 6? 94 + 6?

5. How many are 5 + 5? 15 + 5? 25 + 5? 35 + 5? 45 + 5? 55 + 5? 65 + 5? 75 + 5? 85 + 5? 95 + 5?

6. How many are 6 + 6? 16 + 6? 26 + 6? 36 + 6? 46 + 6? 56 + 6? 66 + 6? 76 + 6? 86 + 6? 96 + 6?

7. How many are 7 + 3? 17 + 3? 27 + 3? 37 + 3? 47 + 3? 57 + 3? 67 + 3? 77 + 3? 87 + 3? 97 + 3?

8. How many are 8 + 4? 18 + 4? 28 + 4? 38 + 4? 48 + 4? 58 + 4? 68 + 4? 78 + 4? 88 + 4? 98 + 4?

9. How many are 9 + 5? 19 + 5? 29 + 5? 39 + 5? 49 + 5? 59 + 5? 69 + 5? 79 + 5? 89 + 5? 99 + 5?

WRITTEN EXERCISES.

LESSON 15.

(1.)	*(2.)*	*(3.)*	*(4.)*	*(5.)*	*(6.)*
12	13	14	15	10	11
18	17	17	18	29	39

(7.)	*(8.)*	*(9.)*	*(10.)*	*(11.)*	*(12.)*
13	20	30	41	52	63
12	11	27	38	27	23
16	19	14	20	10	13

(13.)	*(14.)*	*(15.)*	*(16.)*	*(17.)*	*(18.)*
72	36	44	33	22	10
13	23	34	33	42	80
15	41	22	34	36	10

19. My horse cost 75 dollars, and the saddle 25 dollars; how much did both cost?

20. If I walk 50 yards to the store, and the same distance back, how many yards do I walk in all?

21. A farmer has 69 acres in one field, 30 acres in another, and 11 acres in a third; how many acres in his farm?

22. How many are $33 + 33 + 44$?

23. How many are $60 + 40 + 30$?

ORAL EXERCISES.

LESSON 16.

1. Mother bought a chicken for 90 cents, and a pigeon for 10 cents; how much did she pay for both?

2. A pound of butter cost 50 cents, a loaf of bread 5 cents, and a quart of milk 10 cents; how much for the whole?

3. If I pay 21 cents for some lard, 4 cents for some herbs, and 5 cents for a melon, what do I pay in all?

4. Sold a ton of hay for 14 dollars, a load of apples for 10 dollars, and a bushel of potatoes for 1 dollar; how much did I get for the whole?

5. A pound of coffee cost 30 cents, an ounce of spice 10 cents, and a pint of vinegar 6 cents; how much did they cost in all?

6. If I buy a dozen eggs for 36 cents, and a pint of molasses for 10 cents, how much do I pay for both?

7. How many are 5 + 5? 10 + 5? 15 + 5? 20 + 5? 25 + 5? 30 + 5? 35 + 5? 40 + 5?

8. How many are 6 + 6? 12 + 6? 18 + 6? 24 + 6? 30 + 6? 36 + 6? 42 + 6? 48 + 6? 54 + 6? 60 + 6?

9. How many are 10+10? 20+10? 30+10? 40+10? 50+10? 60+10? 70+10? 80+10? 90+10?

WRITTEN EXERCISES.

LESSON 17.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)
121	225	336	455	555
229	436	454	544	444

(*6.*)	(*7.*)	(*8.*)	(*9.*)	(*10.*)
134	222	333	544	626
233	333	333	223	213
442	435	334	233	181

(*11.*)	(*12.*)	(*13.*)	(*14.*)	(*15.*)
465	511	417	324	717
100	109	311	415	100
405	280	281	261	183

(*16.*)	(*17.*)	(*18.*)	(*19.*)	(*20.*)
199	222	306	524	815
801	333	200	118	125
11	414	15	301	305
120	100	172	400	15
111	210	501	312	175

21. I have 125 sheep in one field, 850 in another, and 225 in another; how many sheep in all?

22. How many are 75 + 105 + 920?

23. What is the sum of 555, 231, 224, and 101?

24. How many are 467 + 131 + 142 + 300?

ORAL EXERCISES.

LESSON 18.

1. How many cents are equal to two ten-cent pieces?

2. 15 cents for a comb, and 10 cents for a paper of pins; how much for both?

3. $11+9=$ how many? $11+10$? $11+11$? $11+12$? $20+11$? $30+11$? $40+11$?

4. How many are $5+5+5$? $6+6+6$? $7+7+7$? $8+8+8$?

5. A barrel of flour cost 9 dollars, a barrel of cider 9 dollars, and a barrel of vinegar 9 dollars; what was the cost of all three?

6. A keg of tobacco cost 10 dollars, a lot of eggs 10 dollars, and a load of apples 10 dollars; what was the cost of all?

7. 10 cents for some peaches, 9 cents for some raisins, and 8 cents for a pound of sugar; how much for all?

8. A load of wood cost 4 dollars, the sawing cost 4 dollars, and the splitting 4 more; how much did the wood cost in all?

9. 10 dollars for a frock, 8 dollars for a bonnet, 7 dollars for a cloak; what did they all cost?

WRITTEN EXERCISES.

LESSON 19.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)
111	222	333	444	555
111	222	333	444	555
111	222	333	444	555

(*6.*)	(*7.*)	(*8.*)	(*9.*)	(*10.*)
666	777	888	999	1000
666	777	888	999	909
666	777	888	999	1091

(*11.*)	(*12.*)	(*13.*)	(*14.*)	(*15.*)
1224	2345	3214	4100	5555
2312	1234	2113	2717	2222
3401	1140	4001	3181	1111
4062	6211	1672	1012	3333

(*16.*)	(*17.*)	(*18.*)	(*19.*)	(*20.*)
2301	3904	1001	4114	5111
3214	2060	7777	2561	2222
4105	3001	2001	1730	4666
1380	1035	9221	9605	7001

21. I have four bales of cotton, weighing 479, 506, 499, and 480 pounds; how much do they all weigh?

22. A merchant bought cloth for 1000 dollars, flour for 506 dollars, and cotton for 904 dollars; what did he pay for all?

ORAL EXERCISES.

LESSON 20.

1. Thomas paid 12 cents for a slate, and 8 cents for some paper; he has 8 cents left; how much did he have at first?

2. There are 11 boys, 10 men, and 9 girls at work in a mill; how many in all?

3. A quire of paper cost 12 cents, a slate 12 cents, and a box of pens 12 cents; how much did they all cost?

4. There are 6 boys in one class, and two classes of girls, each having 6; how many boys and girls in all?

5. What will three cords of wood cost, at 10 dollars a cord? $10+10+10=$ how many?

6. How many are $9+6$? $19+6$? $29+6$? $39+6$? $49+6$? $59+6$? $69+6$? $79+6$? $89+6$?

7. In one bushel there are 4 pecks; how many pecks in 2 bushels? $4+4=$ how many?

8. If a horse costs 58 dollars, and a saddle costs 8 dollars; what is the cost of both?

9. In one peck there are 8 quarts; how many quarts in 2 pecks? $8+8=$ how many?

10. In one quart there are 2 pints; how many pints in 2 quarts? In 3 quarts?

11. $10+8+2=$ how many?

12. $8+8+8=$ how many?

WRITTEN EXERCISES.

LESSON 21.

(*1.*)	(*2.*)	(*3.*)	(*4.*)
8395	7917	2380	8268
2719	6593	5978	6147
6546	8765	2443	5736
4652	5945	7639	6473

(*5.*)	(*6.*)	(*7.*)	(*8.*)
3458	7305	1928	4755
5962	3009	1336	5564
3746	9171	1442	3001
8264	1002	9999	6782

(*9.*)	(*10.*)	(*11.*)	(*12.*)
4586	2443	9173	9876
9629	1827	1800	1874
3482	9401	9901	2119
4719	8007	2009	7000

(*13.*)	(*14.*)	(*15.*)	(*16.*)
3457	4673	9197	7417
7653	3764	8288	6396
6731	9137	3379	7461
4379	8291	1467	1099

17. What is the sum of 3240 + 4019 + 9100 + 897 + 16 + 8701?

18. I bought 3 houses, and paid 4444 dollars apiece; how much did I pay for all?

SUBTRACTION.

ORAL EXERCISES.

LESSON 22.

1 from 1 leaves 0.
1 from 2 leaves 1.
1 from 3 leaves 2.
1 from 4 leaves 3.
1 from 5 leaves 4.
1 from 6 leaves 5.
1 from 7 leaves 6.
1 from 8 leaves 7.
1 from 9 leaves 8.
1 from 10 leaves 9.

2 from 2 leaves 0.
2 from 3 leaves 1.
2 from 4 leaves 2.
2 from 5 leaves 3.
2 from 6 leaves 4.
2 from 7 leaves 5.
2 from 8 leaves 6.
2 from 9 leaves 7.
2 from 10 leaves 8.
2 from 11 leaves 9.

This sign — shows that the number after it is to be subtracted from the number before it. It is called *minus*, and means *less*.

$1-1=0$.
$2-1=1$.
$3-1=2$.
$4-1=3$.
$5-1=4$.
$6-1=5$.
$7-1=6$.
$8-1=7$.
$9-1=8$.
$10-1=9$.

$2-2=0$.
$3-2=1$.
$4-2=2$.
$5-2=3$.
$6-2=4$.
$7-2=5$.
$8-2=6$.
$9-2=7$.
$10-2=8$.
$11-2=9$.

Note.—In *borrowing*, the *logical* method is to lessen the next figure of the minuend by 1; *practically*, however, it is more convenient to add the 1 to the next figure of the subtrahend.

WRITTEN EXERCISES.

LESSON 23.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)	(*7.*)
1	2	3	4	5	6	7
1	1	1	1	1	1	1

(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)	(*13.*)	(*14.*)
8	9	10	2	3	4	5
1	1	2	2	2	2	2

(*15.*)	(*16.*)	(*17.*)	(*18.*)	(*19.*)	(*20.*)	(*21.*)
6	7	8	9	10	11	24
2	2	2	2	2	2	12

22. 32—21.
23. 56—22.
24. 98—21.
25. 75—22.
26. 88—22.
27. 33—11.
28. 37—11.
29. 69—22.
30. 85—12.
31. 67—21.
32. 59—22.
33. 66—12.
34. 45—12.
35. 95—11.
36. 54—22.

37. A man having 65 dollars loses 21 of them; how many has he remaining?

38. William ran 52 rods, and James ran 22; how much farther did William run than James?

39. There are 36 pupils in a school, and 12 of them are boys; how many are girls?

40. A jar filled with lard weighs 32 pounds, and the jar alone weighs 12 pounds; what is the weight of the lard?

ORAL EXERCISES.

LESSON 24.

3 from 3 leaves 0.
3 from 4 leaves 1.
3 from 5 leaves 2.
3 from 6 leaves 3.
3 from 7 leaves 4.
3 from 8 leaves 5.
3 from 9 leaves 6.
3 from 10 leaves 7.
3 from 11 leaves 8.
3 from 12 leaves 9.

4 from 4 leaves 0.
4 from 5 leaves 1.
4 from 6 leaves 2.
4 from 7 leaves 3.
4 from 8 leaves 4.
4 from 9 leaves 5.
4 from 10 leaves 6.
4 from 11 leaves 7.
4 from 12 leaves 8.
4 from 13 leaves 9.

1. $6 - 3 =$ how many? $4 - 2$? $5 - 3$?

2. In a gallon are four quarts; if 3 quarts leak out, how many quarts remain?

3. 4 panes of glass are broken out of a window containing 12 panes; how many remain?

4. Mary found 9 pins, and gave three to her sister; how many did she keep?

$3 - 3 = 0$.
$4 - 3 = 1$.
$5 - 3 = 2$.
$6 - 3 = 3$.
$7 - 3 = 4$.
$8 - 3 = 5$.
$9 - 3 = 6$.
$10 - 3 = 7$.
$11 - 3 = 8$.
$12 - 3 = 9$.

$4 - 4 = 0$.
$5 - 4 = 1$.
$6 - 4 = 2$.
$7 - 4 = 3$.
$8 - 4 = 4$.
$9 - 4 = 5$.
$10 - 4 = 6$.
$11 - 4 = 7$.
$12 - 4 = 8$.
$13 - 4 = 9$.

WRITTEN EXERCISES.

LESSON 25.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)
4	5	6	8	10	10
3	4	3	4	4	3
(*7.*)	(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)
12	12	13	56	98	35
4	3	4	33	44	34
(*13.*)	(*14.*)	(*15.*)	(*16.*)	(*17.*)	(*18.*)
86	95	99	87	106	127
43	33	34	33	34	43
(*19.*)	(*20.*)	(*21.*)	(*22.*)	(*23.*)	(*24.*)
134	109	127	78	67	125
44	33	44	43	44	34

25. 66 — 33.
26. 99 — 22.
27. 45 — 44.
28. 109 — 21.
29. 124 — 34.
30. 126 — 33.
31. 69 — 34.
32. 109 — 44.
33. 109 — 22.
34. 113 — 33.
35. 96 — 34.
36. 136 — 44.

37. A farmer had 56 hogs and sold 43; how many had he left?

38. James has 65 cents, and John has 34; how many more has James than John?

39. If a man earns 124 dollars in a month and saves 44, how much does he expend?

40. A tree 65 feet high had 43 feet of the top broken off; how high was the remainder of the tree?

ORAL EXERCISES.

LESSON 26.

5 from 5 leaves 0.
5 from 6 leaves 1.
5 from 7 leaves 2.
5 from 8 leaves 3.
5 from 9 leaves 4.
5 from 10 leaves 5.
5 from 11 leaves 6.
5 from 12 leaves 7.
5 from 13 leaves 8.
5 from 14 leaves 9.

6 from 6 leaves 0.
6 from 7 leaves 1.
6 from 8 leaves 2.
6 from 9 leaves 3.
6 from 10 leaves 4.
6 from 11 leaves 5.
6 from 12 leaves 6.
6 from 13 leaves 7.
6 from 14 leaves 8.
6 from 15 leaves 9.

1. How many are 10 — 5? 10 — 6?

2. A farmer having 9 turkeys sells 3 of them; how many are left?

3. There were 11 sheep in a pen, and 5 jumped out; how many remained?

4. A stick was 10 feet long, and the carpenter sawed off 4 feet; how many feet were left?

$5-5=0.$
$6-5=1.$
$7-5=2.$
$8-5=3.$
$9-5=4.$
$10-5=5.$
$11-5=6.$
$12-5=7.$
$13-5=8.$
$14-5=9.$

$6-6=0.$
$7-6=1.$
$8-6=2.$
$9-6=3.$
$10-6=4.$
$11-6=5.$
$12-6=6.$
$13-6=7.$
$14-6=8.$
$15-6=9.$

WRITTEN EXERCISES.

LESSON 27.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)
8	12	14	11	14	15
5	5	6	6	5	6
(*7.*)	(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)
69	87	145	129	157	106
56	65	65	56	65	66
(*13.*)	(*14.*)	(*15.*)	(*16.*)	(*17.*)	(*18.*)
105	84	95	74	73	61
55	55	56	55	55	56
(*19.*)	(*20.*)	(*21.*)	(*22.*)	(*23.*)	(*24.*)
105	124	133	126	154	111
56	56	55	56	55	56

25. 121 — 56.
26. 132 — 55.
27. 143 — 56.
28. 115 — 65.
29. 133 — 56.
30. 122 — 55.
31. 144 — 56.
32. 110 — 56.
33. 120 — 55.
34. 130 — 56.
35. 140 — 55.
36. 100 — 56.

37. A father is 83 years old, and his son 59; what is the difference in their ages?

38. A man bought 126 pounds of beef, and gave 56 pounds away; how many pounds did he keep?

39. In a primary school there were 155 boys; 26 were promoted; how many remained?

ORAL EXERCISES.

LESSON 28.

7 from 7 leaves 0.
7 from 8 leaves 1.
7 from 9 leaves 2.
7 from 10 leaves 3.
7 from 11 leaves 4.
7 from 12 leaves 5.
7 from 13 leaves 6.
7 from 14 leaves 7.
7 from 15 leaves 8.
7 from 16 leaves 9.

8 from 8 leaves 0.
8 from 9 leaves 1.
8 from 10 leaves 2.
8 from 11 leaves 3.
8 from 12 leaves 4.
8 from 13 leaves 5.
8 from 14 leaves 6.
8 from 15 leaves 7.
8 from 16 leaves 8.
8 from 17 leaves 9.

1. John makes 12 figures on his slate, and rubs out 8; how many are left?

2. How many are 16—8? 14—7? 11—7?

3. Mary has 10 examples to perform; she gets 8 done; how many has she yet to do?

4. Henry swims 16 yards, and James 8 yards; how much farther does Henry swim than James?

$7-7=0.$
$8-7=1.$
$9-7=2.$
$10-7=3.$
$11-7=4.$
$12-7=5.$
$13-7=6.$
$14-7=7.$
$15-7=8.$
$16-7=9.$

$8-8=0.$
$9-8=1.$
$10-8=2.$
$11-8=3.$
$12-8=4.$
$13-8=5.$
$14-8=6.$
$15-8=7.$
$16-8=8.$
$17-8=9.$

WRITTEN EXERCISES.

LESSON 29.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)
99	98	147	136	177
88	78	88	77	87

(*6.*)	(*7.*)	(*8.*)	(*9.*)	(*10.*)
110	813	917	884	990
77	708	787	778	777

(*11.*)	(*12.*)	(*13.*)	(*14.*)	(*15.*)
892	909	1079	1296	1577
778	887	877	878	778

(*16.*)	(*17.*)	(*18.*)	(*19.*)	(*20.*)
1090	1778	1692	1483	1276
877	788	877	777	778

21. 1520 – 778.
22. 1222 – 778.
23. 1324 – 78.
24. 1290 – 777.
25. 1690 – 878.
26. 1920 – 778.
27. 1699 – 878.
28. 1040 – 778.
29. 1450 – 77.
30. 1090 – 777.
31. 1897 – 887.
32. 1580 – 878.

33. If I buy a house for 877 dollars, and sell it for 1092 dollars, what do I gain?

34. If I buy the house for 1092 dollars, and sell it for 877, what do I lose?

35. A fisherman caught 1079 herrings on Monday and 788 on Tuesday; how many more did he catch on Monday than on Tuesday?

ORAL EXERCISES.

LESSON 30.

9 from 9 leaves 0.
9 from 10 leaves 1.
9 from 11 leaves 2.
9 from 12 leaves 3.
9 from 13 leaves 4.
9 from 14 leaves 5.
9 from 15 leaves 6.
9 from 16 leaves 7.
9 from 17 leaves 8.
9 from 18 leaves 9.

10 from 10 leaves 0.
10 from 11 leaves 1.
10 from 12 leaves 2.
10 from 13 leaves 3.
10 from 14 leaves 4.
10 from 15 leaves 5.
10 from 16 leaves 6.
10 from 17 leaves 7.
10 from 18 leaves 8.
10 from 19 leaves 9.

1. Henry has 11 cents and gives away 9; how many has he left? $11 - 9 =$ how many?

2. Mary having 14 cherries gave 9 to her sister; how many had she left? $14 - 9 =$ how many?

3. John bought a ruler for 10 cents, and sold it for 15 cents; how much did he gain?

$9 - 9 = 0$.
$10 - 9 = 1$.
$11 - 9 = 2$.
$12 - 9 = 3$.
$13 - 9 = 4$.
$14 - 9 = 5$.
$15 - 9 = 6$.
$16 - 9 = 7$.
$17 - 9 = 8$.
$18 - 9 = 9$.

$10 - 10 = 0$.
$11 - 10 = 1$.
$12 - 10 = 2$.
$13 - 10 = 3$.
$14 - 10 = 4$.
$15 - 10 = 5$.
$16 - 10 = 6$.
$17 - 10 = 7$.
$18 - 10 = 8$.
$19 - 10 = 9$.

WRITTEN EXERCISES.

LESSON 31.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)
181	150	165	100	106	191
109	109	99	99	99	99

(*7.*)	(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)
9001	1201	9010	1001	1500	1200
109	909	9009	99	999	901

(*13.*)	(*14.*)	(*15.*)	(*16.*)	(*17.*)	(*18.*)
1350	1260	1000	1610	1615	1800
999	1099	99	909	900	1009

(*19.*)	(*20.*)	(*21.*)	(*22.*)	(*23.*)	(*24.*)
1622	1400	1001	1711	1848	1101
909	901	109	1009	1009	909

25. 1355 – 209.
26. 1428 – 909.
27. 2000 – 109.
28. 3000 – 99.
29. 1672 – 904.
30. 1223 – 129.
31. 1666 – 901.
32. 1728 – 519.
33. 1827 – 109.
34. 6005 – 99.
35. 4003 – 3004.
36. 1111 – 109.

37. A ship carrying 1100 tons of merchandise, was obliged to cast overboard during a storm 290 tons; how much of the cargo was left?

38. A merchant bought goods for 1000 dollars, and sold them for 990 dollars; what did he lose?

39. The St. Lawrence River is 2200 miles long, and the Hudson 350; how much longer is the St. Lawrence than the Hudson?

ORAL EXERCISES.

LESSON 32.

1. 1 from 10 leaves how many? 1 from 20? 1 from 30? 1 from 40? 1 from 50?

2. 2 from 11 leaves how many? 2 from 21? 2 from 31? 2 from 41? 2 from 51?

3. 3 from 10? 3 from 20? 3 from 30? 3 from 40? 3 from 50? 3 from 60? 3 from 70?

4. 4 from 12? 4 from 22? 4 from 32? 4 from 42? 4 from 52? 4 from 62? 4 from 72?

5. 13−5? 23−5? 33−5? 43−5? 53−5? 63−5? 73−5? 83−5? 93−5?

6. 14−6? 24−6? 34−6? 44−6? 54−6? 64−6? 74−6? 84−6? 94−6?

7. 8 from 12? 8 from 22? 8 from 32? 8 from 42? 8 from 52? 8 from 62? 8 from 72?

8. 10−9? 20−9? 30−9? 40−9? 50−9? 60−9? 70−9? 80−9? 90−9? 100−9?

9. 10 from 15? 10 from 25? 10 from 35? 10 from 45? 10 from 55? 10 from 65?

10. 2 from 12? 2 from 22? 2 from 32? 2 from 42? 2 from 52? 2 from 62? 2 from 72?

11. 3 from 5? 3 from 15? 3 from 25? 3 from 35? 3 from 45? 3 from 55?

12. 4−4? 14−4? 24−4? 34−4? 44−4? 54−4? 64−4?

WRITTEN EXERCISES.

LESSON 33.

(1.)	*(2.)*	*(3.)*	*(4.)*	*(5.)*
1326	1528	1436	6208	3456
907	1009	945	5119	1653
(6.)	*(7.)*	*(8.)*	*(9.)*	*(10.)*
9901	1804	5062	3419	8004
3612	716	4172	2143	5116
(11.)	*(12.)*	*(13.)*	*(14.)*	*(15.)*
1111	2342	4003	8206	5555
999	1636	164	6193	1666
(16.)	*(17.)*	*(18.)*	*(19.)*	*(20.)*
2040	8316	1214	5004	9689
1101	7019	356	1214	8576
(21.)	*(22.)*	*(23.)*	*(24.)*	*(25.)*
9116	4200	5901	3500	2684
4916	2600	4601	419	1648

26. 5132 — 4619.
27. 3003 — 2116.
28. 6789 — 2979.
29. 2000 — 845.
30. 5555 — 2666.
31. 8220 — 4619.
32. 4444 — 1555.
33. 1001 — 99.
34. 6543 — 1009.
35. 4050 — 2025.

36. Mount Washington in New Hampshire is 6288 feet high, and Mount Mitchell in North Carolina is 6582 feet high; what is the difference in their heights?

ORAL EXERCISES.

LESSON 34.

1. Henry paid 10 cents for a ball, and sold it for 7 cents; how much did he lose?

2. A farmer sold 9 cows out of a drove of 17; how many had he left?

3. Sarah had fifteen cherries, and gave eight to her sister; how many did she keep?

4. Mary picked 6 roses from a bush containing 14; how many were left?

5. 5 quarts of chestnuts were sold from a peck containing 8 quarts; how many quarts were left?

6. If there are 16 birds on a limb, and 8 of them fly away, how many will remain?

7. Horace gave 15 cents for a book, and 5 cents less for a slate; what did the slate cost?

8. A boy bought half a quire of paper, containing 12 sheets, and used 5 of them; how many remained?

9. John bought 8 marbles, and then had 15; how many had he at first?

10. James found 18 apples on a tree, and gathered 10 of them; how many remained?

11. A merchant bought coffee for 12 dollars and sold it for eight; how much did he lose?

12. If the merchant buys coffee for 8 dollars and sells it for 12, what is his gain?

13. If I had 9 dollars more I would have 14; how many dollars have I?

WRITTEN EXERCISES.

LESSON 35.

(*1.*)	(*2.*)	(*3.*)	(*4.*)
2596	32001	9851	37620
198	14165	8006	18119
(*5.*)	(*6.*)	(*7.*)	(*8.*)
4444	3001	4226	80412
1555	516	3010	21408
(*9.*)	(*10.*)	(*11.*)	(*12.*)
22110	31416	5029	37123
11200	14132	84	805
(*13.*)	(*14.*)	(*15.*)	(*16.*)
62014	12345	44162	5005
50213	2346	15274	92

17. 8104 − 1600.
18. 3333 − 2444.
19. 50051 − 5005.
20. 8043 − 2199.
21. 3366 − 594.
22. 32051 − 5009.
23. 41092 − 576.
24. 31216 − 999.
25. 7215 − 982.
26. 31846 − 9001.

27. A mile contains 5280 feet; how much less than a mile is 1229 feet?

28. America was discovered in 1492; how many years since then to the present time, 1877?

29. A man's property was worth 15500 dollars; he gave away 5450 dollars; how much was left?

30. An estate worth 13220 dollars was sold for 9950 dollars; what was the loss?

ORAL EXERCISES.

LESSON 36.

1. If 5 gallons of vinegar are sold out of a vessel which contains 12 gallons, how much remains?

2. How many added to 9 make 15?

3. Charles lost 15 cents out of twenty-five; how much had he left?

4. A grocer buys sugar at 13 cents a pound, and sells it for 16; how much does he gain?

5. Twenty birds are in a flock; if 15 are killed, how many are left?

6. How many days from the 10th of the month to the 20th?

7. How many days from the 9th to the 17th?

8. John goes to school at 9 o'clock, and is dismissed at 12 o'clock; how many hours is he in school?

9. William is 21 years old, and his brother 15; what is the difference of their ages?

10. There are 10 cents in a dime; how much less is a dime than a quarter of a dollar?

11. Henry goes to learn a trade at 18 years of age; how long must he remain till he is 21?

12. The 6th boy in a class stays at home on account of sickness, and goes down to number 18; how many seats does he lose?

13. There are 20 in a score; how much less than a score is 12?

WRITTEN EXERCISES.

LESSON 37.

(*1.*)	(*2.*)	(*3.*)	(*4.*)
32108	5000	82001	32140
4169	11	12199	9170
(*5.*)	(*6.*)	(*7.*)	(*8.*)
50214	31811	10001	24462
5021	12166	9980	3118
(*9.*)	(*10.*)	(*11.*)	(*12.*)
40016	10000	56284	32990
4912	1	21653	19891
(*13.*)	(*14.*)	(*15.*)	(*16.*)
66216	32100	12752	98765
4295	15100	6113	6789

17. 32141 — 9876.
18. 80413 — 1009.
19. 30012 — 5116.
20. 20419 — 876.
21. 5000 — 12.
22. 46184 — 35291.
23. 44162 — 31040.
24. 80423 — 62911.
25. 11111 — 9999.
26. 2222 — 1875.
27. 34506 — 6318.
28. 40004 — 30006.

29. The earth is 25000 miles in circumference and 8000 miles in diameter; what is the difference?

30. How many years between the discovery of America in 1492, and the commencement of the Revolutionary War in 1775?

MULTIPLICATION.

ORAL EXERCISES.

LESSON 38.

Once 1 is 1.
Once 2 is 2.
Once 3 is 3.
Once 4 is 4.
Once 5 is 5.
Once 6 is 6.
Once 7 is 7.
Once 8 is 8.
Once 9 is 9.
Once 10 is 10.

Twice 1 are 2.
Twice 2 are 4.
Twice 3 are 6.
Twice 4 are 8.
Twice 5 are 10.
Twice 6 are 12.
Twice 7 are 14.
Twice 8 are 16.
Twice 9 are 18.
Twice 10 are 20.

This sign × is read *multiplied by,* and shows that the numbers between which it is placed are to be multiplied together.

1. What is the cost of 2 apples at 1 cent apiece?

2. What is the cost of 2 pears at 2 cents each?

$1 \times 1 = 1$.
$2 \times 1 = 2$.
$3 \times 1 = 3$.
$4 \times 1 = 4$.
$5 \times 1 = 5$.
$6 \times 1 = 6$.
$7 \times 1 = 7$.
$8 \times 1 = 8$.
$9 \times 1 = 9$.
$10 \times 1 = 10$.

$1 \times 2 = 2$.
$2 \times 2 = 4$.
$3 \times 2 = 6$.
$4 \times 2 = 8$.
$5 \times 2 = 10$.
$6 \times 2 = 12$.
$7 \times 2 = 14$.
$8 \times 2 = 16$.
$9 \times 2 = 18$.
$10 \times 2 = 20$.

WRITTEN EXERCISES.

LESSON 39.

(1.)	*(2.)*	*(3.)*	*(4.)*	*(5.)*	*(6.)*	*(7.)*	*(8.)*
1	2	3	4	5	6	7	8
1	1	1	1	1	1	1	1

(9.)	*(10.)*	*(11.)*	*(12.)*	*(13.)*	*(14.)*	*(15.)*	*(16.)*
9	1	2	3	4	5	6	7
1	2	2	2	2	2	2	2

(17.)	*(18.)*	*(19.)*	*(20.)*	*(21.)*	*(22.)*	*(23.)*	*(24.)*
8	9	2	2	2	2	2	2
2	2	2	3	4	5	6	7

(25.)	*(26.)*	*(27.)*	*(28.)*	*(29.)*	*(30.)*	*(31.)*	*(32.)*
2	2	1	1	1	1	1	1
8	9	8	7	6	5	4	3

33. 1 fig cost 2 cents; what will 5 figs cost?

34. What is the cost of 6 tops, at 2 cents each?

35. If 1 egg costs 2 cents, how many cents will 7 eggs cost?

36. If I pay 2 dollars for 1 book, how many dollars will 8 such books cost?

37. If a car travels 2 squares in 1 minute, how far will it travel in 9 minutes?

38. Paid 2 cents apiece for 10 oranges; how much did they cost me in all?

39. 10 × 2 are how many? 2 × 10 = how many?

ORAL EXERCISES.

LESSON 40.

3 times 1 are 3.
3 times 2 are 6.
3 times 3 are 9.
3 times 4 are 12.
3 times 5 are 15.
3 times 6 are 18.
3 times 7 are 21.
3 times 8 are 24.
3 times 9 are 27.
3 times 10 are 30.

4 times 1 are 4.
4 times 2 are 8.
4 times 3 are 12.
4 times 4 are 16.
4 times 5 are 20.
4 times 6 are 24.
4 times 7 are 28.
4 times 8 are 32.
4 times 9 are 36.
4 times 10 are 40.

1. In one pint there are 4 gills; how many gills in 2 pints? Twice 4 are how many?

2. 4 pecks make a bushel; how many pecks in 3 bushels? 3 times 4 = how many?

3. 10 cents in one dime; how many cents in 3 dimes? 3 times 10 are how many?

$1 \times 3 = 3.$
$2 \times 3 = 6.$
$3 \times 3 = 9.$
$4 \times 3 = 12.$
$5 \times 3 = 15.$
$6 \times 3 = 18.$
$7 \times 3 = 21.$
$8 \times 3 = 24.$
$9 \times 3 = 27.$
$10 \times 3 = 30.$

$1 \times 4 = 4.$
$2 \times 4 = 8.$
$3 \times 4 = 12.$
$4 \times 4 = 16.$
$5 \times 4 = 20.$
$6 \times 4 = 24.$
$7 \times 4 = 28.$
$8 \times 4 = 32.$
$9 \times 4 = 36.$
$10 \times 4 = 40.$

WRITTEN EXERCISES.

LESSON 41.

(1.)	*(2.)*	*(3.)*	*(4.)*	*(5.)*	*(6.)*	*(7.)*	*(8.)*
10	9	8	7	6	5	4	2
3	3	3	3	3	3	3	3

(9.)	*(10.)*	*(11.)*	*(12.)*	*(13.)*	*(14.)*	*(15.)*	*(16.)*
10	9	8	7	6	5	3	2
4	4	4	4	4	4	4	4

(17.)	*(18.)*	*(19.)*	*(20.)*	*(21.)*	*(22.)*	*(23.)*	*(24.)*
11	12	13	14	15	16	17	18
3	3	3	3	3	3	3	3

(25.)	*(26.)*	*(27.)*	*(28.)*	*(29.)*	*(30.)*	*(31.)*	*(32.)*
11	12	13	14	15	16	17	18
4	4	4	4	4	4	4	4

33. What is the cost of 4 barrels of flour, at 8 dollars a barrel?

34. 4 × 7 = how many? 7 × 4 = how many?

35. What is the cost of 3 quarts of vinegar, at 9 cents a quart? 9 × 3 = how many?

36. 4 × 6 = how many? 6 × 4 = how many?

37. 1 slate cost 10 cents; what will 3 slates cost?

38. 10 × 3 = how many? 3 × 10 = how many?

39. 10 dimes in 1 dollar; how many dimes in 4 dollars?

40. How many marbles can be bought for 6 cents, at the rate of 3 for a cent?

ORAL EXERCISES.

LESSON 42.

5 times 1 are 5.
5 times 2 are 10.
5 times 3 are 15.
5 times 4 are 20.
5 times 5 are 25.
5 times 6 are 30.
5 times 7 are 35.
5 times 8 are 40.
5 times 9 are 45.
5 times 10 are 50.

6 times 1 are 6.
6 times 2 are 12.
6 times 3 are 18.
6 times 4 are 24.
6 times 5 are 30.
6 times 6 are 36.
6 times 7 are 42.
6 times 8 are 48.
6 times 9 are 54.
6 times 10 are 60.

1. What is the cost of 2 cups, at 5 cents each?

2. How much for 3 mugs, at 6 cents apiece?

3. What is the value of 4 bunches of grapes, at 6 cents a bunch? 6 × 4 = how many?

4. 6 cords of wood, at 5 dollars a cord, cost how much?

1 × 5 = 5.
2 × 5 = 10.
3 × 5 = 15.
4 × 5 = 20.
5 × 5 = 25.
6 × 5 = 30.
7 × 5 = 35.
8 × 5 = 40.
9 × 5 = 45.
10 × 5 = 50.

1 × 6 = 6.
2 × 6 = 12.
3 × 6 = 18.
4 × 6 = 24.
5 × 6 = 30.
6 × 6 = 36.
7 × 6 = 42.
8 × 6 = 48.
9 × 6 = 54.
10 × 6 = 60.

WRITTEN EXERCISES.

LESSON 43.

(1.)	*(2.)*	*(3.)*	*(4.)*	*(5.)*	*(6.)*	*(7.)*	*(8.)*
10	11	12	13	14	15	16	17
5	5	5	5	5	5	5	5
(9.)	*(10.)*	*(11.)*	*(12.)*	*(13.)*	*(14.)*	*(15.)*	*(16.)*
20	21	22	23	24	25	26	27
5	5	5	5	5	5	5	5
(17.)	*(18.)*	*(19.)*	*(20.)*	*(21.)*	*(22.)*	*(23.)*	*(24.)*
30	41	52	63	74	85	96	100
6	6	6	6	6	6	6	6
(25.)	*(26.)*	*(27.)*	*(28.)*	*(29.)*	*(30.)*	*(31.)*	*(32.)*
112	222	333	444	555	666	777	888
6	6	6	6	6	6	6	6

33. If 1 hat costs 6 dollars, what will 7 hats cost?

34. 10×6 are how many? 6×10=how many?

35. What cost 6 quarts of peas, at 9 cents a quart?

36. If eggs cost 35 cents a dozen, what will 5 dozen cost? What will 6 dozen cost?

37. Multiply 100 by 5. 200×6= how many?

38. How many horses are 6 times 10 horses?

39. If 1 yard of muslin costs 25 cents, what will 6 yards cost? 25 × 6 = how many?

40. In one day there are 24 hours; how many hours in 5 days? 24×5=how many?

ORAL EXERCISES.

LESSON 44.

7 times 1 are 7.
7 times 2 are 14.
7 times 3 are 21.
7 times 4 are 28.
7 times 5 are 35.
7 times 6 are 42.
7 times 7 are 49.
7 times 8 are 56.
7 times 9 are 63.
7 times 10 are 70.

8 times 1 are 8.
8 times 2 are 16.
8 times 3 are 24.
8 times 4 are 32.
8 times 5 are 40.
8 times 6 are 48.
8 times 7 are 56.
8 times 8 are 64.
8 times 9 are 72.
8 times 10 are 80.

1. If a man travels 10 miles in a day, how many miles will he travel in 7 days?

2. How many dollars are 8 times 9 dollars?

3. 9 times 8 = how many? 8×7 = how many?

4. 7 times 8 = how many? 6×8 = how many?

$1\times7=7.$
$2\times7=14.$
$3\times7=21.$
$4\times7=28.$
$5\times7=35.$
$6\times7=42.$
$7\times7=49.$
$8\times7=56.$
$9\times7=63.$
$10\times7=70.$

$1\times8=8.$
$2\times8=16.$
$3\times8=24.$
$4\times8=32.$
$5\times8=40.$
$6\times8=48.$
$7\times8=56.$
$8\times8=64.$
$9\times8=72.$
$10\times8=80.$

WRITTEN EXERCISES.

LESSON 45.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)	(*7.*)	(*8.*)
112	101	201	302	400	411	502	601
7	7	7	7	7	7	7	7

(*9.*)	(*10.*)	(*11.*)	(*12.*)	(*13.*)	(*14.*)	(*15.*)	(*16.*)
220	321	332	343	354	365	376	387
7	7	7	7	7	7	7	7

(*17.*)	(*18.*)	(*19.*)	(*20.*)	(*21.*)	(*22.*)	(*23.*)	(*24.*)
402	413	424	435	446	457	468	479
8	8	8	8	8	8	8	8

(*25.*)	(*26.*)	(*27.*)	(*28.*)	(*29.*)	(*30.*)	(*31.*)	(*32.*)
512	522	533	544	555	566	577	588
8	8	8	8	8	8	8	8

33. Mary is 6 years old, her father is 8 times as old; how old is he?

34. 111×8=how many? 120×8=how many?

35. 10×8=how many? 100×8=how many?

36. There are 56 rows of trees, and 7 trees in each row; how many trees in all?

37. 50×8=how many? 500×7=how many?

38. 222×7=how many? 333×8=how many?

39. Seven boys have 25 marbles each; how many have they in all? 25×7=how many?

40. 301×8=how many? 103×7=how many?

ORAL EXERCISES.

LESSON 46.

9 times 1 are 9.
9 times 2 are 18.
9 times 3 are 27.
9 times 4 are 36.
9 times 5 are 45.
9 times 6 are 54.
9 times 7 are 63.
9 times 8 are 72.
9 times 9 are 81.
9 times 10 are 90.

10 times 1 are 10.
10 times 2 are 20.
10 times 3 are 30.
10 times 4 are 40.
10 times 5 are 50.
10 times 6 are 60.
10 times 7 are 70.
10 times 8 are 80.
10 times 9 are 90.
10 times 10 are 100.

1. 10 cents make 1 dime; how many cents in 10 dimes?

2. 4 quarts make a gallon; how many quarts in 10 gallons? How many in 9 gallons?

3. 8 times $9 =$ how many? $9 \times 8 =$ how many?

4. $6 \times 9 =$ how many? $9 \times 6 =$ how many?

$1 \times 9 = 9.$
$2 \times 9 = 18.$
$3 \times 9 = 27.$
$4 \times 9 = 36.$
$5 \times 9 = 45.$
$6 \times 9 = 54.$
$7 \times 9 = 63.$
$8 \times 9 = 72.$
$9 \times 9 = 81.$
$10 \times 9 = 90.$

$1 \times 10 = 10.$
$2 \times 10 = 20.$
$3 \times 10 = 30.$
$4 \times 10 = 40.$
$5 \times 10 = 50.$
$6 \times 10 = 60.$
$7 \times 10 = 70.$
$8 \times 10 = 80.$
$9 \times 10 = 90.$
$10 \times 10 = 100.$

WRITTEN EXERCISES.

LESSON 47.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)	(*7.*)	(*8.*)
202	212	223	234	245	250	260	206
9	9	9	9	9	9	9	9
(*9.*)	(*10.*)	(*11.*)	(*12.*)	(*13.*)	(*14.*)	(*15.*)	(*16.*)
303	313	324	335	346	357	305	306
9	9	9	9	9	9	9	9
(*17.*)	(*18.*)	(*19.*)	(*20.*)	(*21.*)	(*22.*)	(*23.*)	(*24.*)
400	311	222	111	101	50	40	30
10	10	10	10	10	10	10	10
(*25.*)	(*26.*)	(*27.*)	(*28.*)	(*29.*)	(*30.*)	(*31.*)	(*32.*)
99	88	77	66	55	44	33	22
10	10	10	10	10	10	10	10

33. If 10 yards of cloth will make 1 suit of clothes, how many yards will be required for 100 suits? 100 × 10 = how many?

34. 9 × 10 = how many? 90 × 10 = how many?

35. How many are 900 × 10? 800 × 10?

36. 9 × 9 = how many? 90 × 9 = how many?

37. 8 × 9 = how many? 80 × 9 = how many?

38. 800 men in one regiment, how many men in 9 regiments? 800 × 9 = how many?

39. How many pounds in 8 barrels of salt, each barrel containing 280 pounds?

ORAL EXERCISES.

LESSON 48.

1. How many are 2 times 8? 2 times 6? Twice 10? Twice 9? 2 times 5?

2. 3 times 8 are how many? 3 times 9? 3 × 4? 3 × 6? 3 times 7? 3 × 5?

3. 4 × 6 = how many? 4 times 9? 4 × 8? 4 times 10? 4 times 5? 4 × 4?

4. How many are 5 × 5? 5 × 8? 5 × 7? 5 times 9? 5 times 10? 5 × 3? 5 × 2?

5. 6 times 6 = how many? 6 times 8? 6 × 9? 6 × 5? 6 times 4? 6 × 10?

6. How many are 7 times 10? 7 times 8? 7 × 4? 7 × 3? 7 times 6? 7 × 5?

7. 8 × 8 = how many? 8 × 10? 8 × 9? 8 × 5? 8 × 3? 8 times 2?

8. 9 times 5 = how many? 9 × 6? 9 times 10? 9 × 8? 9 × 3? 9 × 7?

9. How many are 10 times 10? 10 × 8? 10 × 6? 10 × 4? 10 times 3? 10 × 9?

10. How many are 4 times 9? 6 times 6? 9 times 4? 3 times 8? 4 × 6? 6 × 4?

11. 7 × 9 = how many? 7 × 8? 7 × 7? 9 × 7? 6 × 9? 8 × 7? 9 × 6?

12. How many are 2 times 3? 3 times 4? 4 times 5? 5 times 6? 6 times 7?

13. 3 × 3 = how many? 4 × 4? 5 × 5? 6 × 6? 7 × 7? 8 × 8? 9 × 9? 10 × 10?

14. How many are 6 × 7? 4 × 3?

WRITTEN EXERCISES.

LESSON 49.

Note.—**The teacher should now explain the method of multiplying when there are ciphers at the right of the multiplier.**

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)
3005	3121	3222	3225	3230
10	20	30	40	50
(*6.*)	(*7.*)	(*8.*)	(*9.*)	(*10.*)
3245	4790	5641	5001	6123
60	70	80	90	80
(*11.*)	(*12.*)	(*13.*)	(*14.*)	(*15.*)
7071	8960	9012	1912	1025
70	60	50	40	30

16. How much will 6 horses cost, at 125 dollars each? At 225 dollars each?

17. If 1 piano costs 525 dollars, what will 9 pianos cost at the same rate?

18. Multiply 350 by 8. Multiply 276 by 9.

19. If 1 acre produces 50 bushels of corn, how many bushels will 6 acres produce?

20. How much must be paid for 206 barrels of flour, at 9 dollars a barrel?

21. Multiply 80 by 90. 600 by 50.

22. Multiply 250 by 70. 365 by 80.

23. What is the cost of 999 horses, at 90 dollars each? At 80 dollars each?

ORAL EXERCISES.

LESSON 50.

1. A man earns 7 dollars in 1 week; how much will he earn in 4 weeks?

2. If a man earns 4 dollars in 1 week, how much will he earn in 7 weeks?

3. What is the cost of 8 pounds of sugar, at 10 cents a pound? $10 \times 8 =$ how many?

4. What cost 9 reams of paper at 4 dollars a ream? At 6 dollars a ream?

5. 6 boys can do a piece of work in 1 day; how long will it take one boy?

6. 9 men can dig a well in 2 days; how long will it take 1 man to dig it?

7. 9 men can do a piece of work in 3 days; how long will 1 man require to do the same work? $3 \times 9 =$ how many?

8. If 7 men can build a fence in 6 days, how many men could build it in 1 day?

9. 9 dollars a week for board will amount to how much in 7 weeks?

10. 4 farthings in 1 penny, how many farthings in 6 pence? How many in 9 pence?

11. If a loaf of bread costs 10 cents, what will 10 loaves cost?

12. If a man walks 3 miles in an hour, how far will he walk in 7 hours?

13. A boy recites 6 lessons in one day; how many will he recite in 5 days?

WRITTEN EXERCISES.

LESSON 51.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)
173	134	144	142	141
11	12	12	12	12
(*6.*)	(*7.*)	(*8.*)	(*9.*)	(*10.*)
140	2015	2123	3014	3123
12	13	14	15	16
(*11.*)	(*12.*)	(*13.*)	(*14.*)	(*15.*)
3234	3456	4142	5012	5123
17	18	20	30	40
(*16.*)	(*17.*)	(*18.*)	(*19.*)	(*20.*)
6234	9345	9256	7175	2562
50	100	200	300	400

21. 7856 × 80 = how many? 7766 × 90 = how many?

22. What is the result of 8888 × 100?

23. 200 pounds in a barrel of beef; how many pounds in 195 barrels?

24. What is the cost of 2000 copy-books, at 10 cents apiece?

25. 480 sheets in 1 ream of paper; how many sheets in 500 reams?

26. 24 sheets in 1 quire of paper; how many sheets in 2000 quires?

27. What is the result of 100 × 100?

28. What is the result of 200 × 200?

ORAL EXERCISES.

LESSON 52.

1. 10 times 10 are how many? 10 × 9 = how many?

2. 9 × 9 = how many? 8 × 9 = how many?

3. 8 times 9 gallons are how many gallons?

4. What is the cost of 9 bonnets, at 7 dollars apiece? 7 × 9 = how many?

5. 6 men can build a boat in 8 weeks; how long will it require for 1 man to build it? 8 × 6 = how many?

6. 8 drams in 1 ounce; how many drams in 6 ounces? How many in 7 ounces? In 8 ounces? In 9 ounces?

7. 3 scruples in 1 dram; how many scruples in 8 drams? 3 × 8 = how many?

8. 3 miles make 1 league; how many miles in 9 leagues? In 10 leagues?

9. 9 square feet make 1 square yard; how many square feet in 3 square yards? In 6 square yards? In 9 square yards? In 10 square yards?

10. 4 roods make 1 acre; how many roods in 7 acres? In 8 acres?

11. 10 square chains make 1 acre; how many square chains in 8 acres?

12. 8 pints in 1 gallon; how many pints in 8 gallons? 8 × 8 = how many?

13. In a school-room there are 10 desks, and 4 boys at each desk; how many boys in the room?

WRITTEN EXERCISES.

LESSON 53.

(*1.*)	(*2.*)	(*3.*)	(*4.*)	(*5.*)	(*6.*)
314	450	554	660	751	876
151	112	115	125	221	225
(*7.*)	(*8.*)	(*9.*)	(*10.*)	(*11.*)	(*12.*)
999	1000	121	159	1444	219
301	401	596	121	565	765
(*13.*)	(*14.*)	(*15.*)	(*16.*)	(*17.*)	(*18.*)
1608	843	1220	820	1001	859
423	843	102	152	999	958

19. 144 square inches in 1 square foot; how many square inches in 119 square feet?

20. 1728 cubic inches in 1 cubic foot; how many cubic inches in 501 cubic feet?

21. 1760 yards in 1 mile; how many yards in 500 miles?

22. 12 inches in 1 foot; how many inches in 356 feet?

23. 63 gallons in 1 hogshead; how many gallons in 996 hogsheads?

24. If 280 pounds of salt make 1 barrel, how many pounds in 280 barrels?

25. 128 cubic feet make a cord of wood; how many cubic feet in 1000 cords?

26. 640 acres make 1 square mile; how many acres in 888 square miles?

ORAL EXERCISES.

LESSON 54.

The denominations of UNITED STATES MONEY are *eagles, dollars, dimes, cents,* and *mills.*

This money is also called Federal Money.

10 mills (m.) make 1 cent (ct.)
10 cents make 1 dime (d.)
10 dimes make 1 dollar ($.)
10 dollars make 1 eagle (E.)

1. Repeat the table of United States Money.

2. How many mills in 2 cents? In 3? In 4?

3. How many mills in 5 cents? In 6? In 7?

4. How many cents in 8 dimes? In 9? In 10?

5. How many dollars in 5 eagles? In 6?

6. How many dimes will pay for 8 bushels of wheat at 10 dimes a bushel?

7. How many cents in 10 dimes?

8. How many cents in 5 dollars? In 6?

9. If I have 5 dollars and my brother has 5 times as much, how many dollars has he?

10. How many cents are 5 times 20 cents?

11. 3 times 10 dimes are how many dollars?

12. A boy earns 8 dimes in 1 day; how many dimes will he earn in 9 days?

13. 8 times 10 dimes are how many dollars?

14. 1 dollar a day is how many dimes in 6 days? 6 times 10 dimes are how many dimes?

15. How many mills in 1 dime? In 2? In 3?

WRITTEN EXERCISES.

LESSON 55.

1. 412121 × 3012 = how many?

2. Multiply 19001 by 4002. 5632 × 2365 = how many?

3. How many rods in 1500 miles, there being 320 rods in 1 mile?

4. 2240 pounds make 1 long ton; how many pounds in 2000 long tons?

5. 2000 pounds in 1 short ton; how many pounds in 2240 short tons?

6. 100 cents in 1 dollar; how many cents in 1001 dollars?

7. 7001 × 4010 = how many?

8. What is the product of 8000 × 7610?

9. What is the value of 500 bales of cotton, at 60 dollars a bale?

10. 365 days in 1 common year; how many days in 365 common years?

11. 366 days in 1 leap year; how many days in 125 leap years?

12. Multiply 56013 by 3001.

13. What is the product of 1512 × 117?

14. In 1 mile there are 80 chains; how many chains in 750 miles?

15. In 1 day there are 24 hours; how many hours in 365 days?

16. In one day there are 86400 seconds; how many seconds in 366 days?

ORAL EXERCISES.

LESSON 56.

The denominations of LIQUID MEASURE are *gallons*, *quarts*, *pints*, and *gills*.

4 gills (gi.)	make 1 pint,	(pt.)
2 pints	make 1 quart,	(qt.)
4 quarts	make 1 gallon,	(gal.)

1. Repeat the table of Liquid Measure.

2. How many gills in 2 pints? In 3? In 4? In 5? In 6? In 7? In 8? In 9?

3. How many pints in 2 quarts? In 3? In 4? In 5? In 6? In 7? In 8? In 9?

4. How many quarts in 2 gallons? In 3? In 4? In 5? In 6? In 7? In 8? In 9?

5. What must I pay for a pint of cream, at the rate of 6 cents for a gill?

6. What cost 8 gallons of wine, at 9 dollars a gallon? At 10 dollars a gallon?

7. What cost 1 gallon of brandy, at 2 dollars a quart? At 3 dollars a quart?

8. 3 times 4 quarts are how many gallons?

9. 6 times 2 pints are how many quarts?

10. 8 times 4 gills are how many pints?

11. Mary sells 1 pint of milk, at 2 cents a gill; how much does she get in all?

12. 2 times 4 multiplied by 2 times 4 are how many?

13. 3 times 3 multiplied by 9 are how many?

WRITTEN EXERCISES.

LESSON 57.

1. 301311 × 4041 = how many?

2. 196 pounds in 1 barrel of flour; how many pounds in 540002 barrels?

3. 360 degrees in 1 circle; how many degrees in 360 circles?

4. 7000 grains make 1 pound Avoirdupois; how many grains in 5760 pounds of iron?

5. 5760 grains make 1 pound Troy; how many grains in 7000 pounds of gold?

6. A Mexican doubloon is worth 1553 cents; how many cents are equal to 564 doubloons?

7. An Austrian ducat is worth 2283 mills; how many mills are equal to 1005 ducats?

8. A French five-franc piece is worth 98 cents; what is the worth in cents of 5550 such pieces?

9. An English sovereign is worth 4866 mills; how many mills are 25000 sovereigns worth?

10. How many oranges in 560 boxes, if each box contains 300 oranges?

11. Multiply 70712 by 34001.

12. What is the product of 9005 by 5009?

13. What is the cost of 2001 hogsheads of wine, at 99 dollars a hogshead?

14. 231 cubic inches in 1 gallon of wine; how many cubic inches in 20042 gallons?

15. 63360 inches in 1 mile; how many inches in 25000 miles?

ORAL EXERCISES.

LESSON 58.

The denominations of DRY MEASURE are *bushels*, *pecks*, *quarts*, and *pints*.

2	pints (pt.)	make 1	quart,	(qt.)
8	quarts	make 1	peck,	(pk.)
4	pecks	make 1	bushel,	(bu.)

1. Repeat the table of Dry Measure.

2. How many pints in 2 quarts? In 3? In 4?

3. How many pints in 5 quarts? In 6? In 7?

4. How many quarts in 1 peck? In 2? In 3?

5. How many quarts in 4 pecks? In 5? In 6?

6. How many pecks in 1 bushel? In 2? In 3?

7. What is the cost of a peck of tomatoes, at the rate of 8 cents a quart?

8. 10 cents a peck is how much a bushel?

9. 6 times 4 pecks are how many bushels?

10. 3 times 8 quarts are how many pecks?

11. If 1 pint of strawberries costs 10 cents, what will 4 pints cost at the same rate?

12. If a peck of potatoes costs 2 dimes, what will a bushel cost? What will 10 bushels cost?

13. How many quarts in 9 pecks? In 10 pecks?

14. A quart of oats will weigh 1 pound; what will a peck of oats weigh?

15. If wheat is 3 dimes for 1 peck, what will 1 bushel cost? What will 6 bushels cost?

WRITTEN EXERCISES.

LESSON 59.

1. 504 pints in a hogshead; how many pints in 25601 hogsheads?

2. 6400 square chains in 1 square mile; how many square chains in 500 square miles?

3. 640 square acres in a square mile; how many square acres in 9901 square miles?

4. 8760 hours in a year; how many hours in 1875 years?

5. 525600 minutes in a year; how many minutes in 404 years?

6. 1296000 seconds in 1 circle; how many seconds in 360 circles?

7. 2016 gills in 1 hogshead; how many gills in 2006 hogsheads?

8. If I buy 2000 barrels of fish, at 18 dollars a barrel, what do I pay for the lot?

9. What will 2000 barrels of fish weigh, if each barrel weighs 200 pounds?

10. What is the value of 1000 barrels of flour, each barrel containing 196 pounds, if flour is worth 4 cents a pound?

11. What is the cost of 200 firkins of butter, each firkin containing 56 pounds; butter being worth 40 cents a pound?

12. Multiply 90109 by 606.

13. 390001 × 1003 = how many?

14. 760915 × 899 = how many?

ORAL EXERCISES.

LESSON 60.

The denominations of AVOIRDUPOIS WEIGHT are *tons*, *hundred-weights*, *pounds*, and *ounces*.

16 ounces (oz.) make 1 pound, (℔.)
100 pounds make 1 hundred-weight, (cwt.)
20 hundred-weights make 1 ton, (T.)

1. Repeat the table of Avoirdupois Weight.

2. If a ton of coal costs 7 dollars, what will 4 tons cost? 5 tons? 8 tons?

3. At 6 cents an ounce, what will 8 ounces of tea cost? 10 ounces?

4. How much will 6 pounds of sugar cost, at 9 cents a pound?

5. If a hundred-weight of flour costs 4 dollars, what will 10 hundred-weight cost

6. What will 10 ounces of tobacco cost, at 10 cents an ounce?

7. An ounce of rhubarb costs 5 cents; what will 8 ounces cost? 9 ounces?

8. Henry bought 6 pounds of soap, at 8 cents a pound; what did it cost him?

9. If I can buy 3 pounds of coffee for a dollar, how many pounds can I buy for 9 dollars?

10. If I pay 9 dimes for a pound of fine candies, what will 9 pounds cost?

11. If 8 men buy 8 tons of hay apiece, how much do they buy in all?

WRITTEN EXERCISES.

LESSON 61.

1. In a cubic foot of marble there are 170 pounds; how many pounds in 954 cubic feet?

2. Coal is sometimes sold by the *long* ton, which contains 2240 pounds; how many pounds are there in 960 *long* tons?

3. In a hundred-weight there are 1600 ounces; how many ounces in 1001 hundred-weights?

4. How many ounces in 34567 pounds, there being 16 ounces in one pound?

5. If I pay 12 dollars a barrel for flour, how much will 1209 barrels cost me?

6. How many pages are there in 4520 books, there being 396 pages in each book?

7. A man bought 2560 acres of land, at 25 dollars an acre; what did it cost him?

8. What would it cost to build a railroad, 150 miles long, at a cost of 20000 dollars for each mile?

9. In a ream of paper there are 480 sheets; how many sheets in 863 reams?

10. 611400 × 469.
11. 123456 × 3400.
12. 300451 × 924.
13. 9654 × 888.
14. 320106 × 4004.
15. 44444 × 567.
16. 200120 × 909.
17. 58426 × 789.
18. 67543 × 495.
19. 49567 × 288.
20. 25016 × 581.
21. 68855 × 396.
22. 91201 × 987.
23. 98765 × 819.

DIVISION.

ORAL EXERCISES.

LESSON 62.

1 in 1, once.
1 in 2, twice.
1 in 3, 3 times.
1 in 4, 4 times.
1 in 5, 5 times.
1 in 6, 6 times.
1 in 7, 7 times.
1 in 8, 8 times.
1 in 9, 9 times.
1 in 10, 10 times.

2 in 2, once.
2 in 4, twice.
2 in 6, 3 times.
2 in 8, 4 times.
2 in 10, 5 times.
2 in 12, 6 times.
2 in 14, 7 times.
2 in 16, 8 times.
2 in 18, 9 times.
2 in 20, 10 times.

This sign ÷ is read *divided by*, and shows that the number before it is to be divided by the number after it.

1. How many times is 2 contained in 10? In 12?

2. $8 \div 2 =$ how many? $14 \div 2$? $16 \div 2$?

$1 \div 1 = 1.$
$2 \div 1 = 2.$
$3 \div 1 = 3.$
$4 \div 1 = 4.$
$5 \div 1 = 5.$
$6 \div 1 = 6.$
$7 \div 1 = 7.$
$8 \div 1 = 8.$
$9 \div 1 = 9.$
$10 \div 1 = 10.$

$2 \div 2 = 1.$
$4 \div 2 = 2.$
$6 \div 2 = 3.$
$8 \div 2 = 4.$
$10 \div 2 = 5.$
$12 \div 2 = 6.$
$14 \div 2 = 7.$
$16 \div 2 = 8.$
$18 \div 2 = 9.$
$20 \div 2 = 10.$

WRITTEN EXERCISES.

LESSON 63.

(*1.*) 2)6	(*2.*) 2)8	(*3.*) 2)12	(*4.*) 2)10	(*5.*) 2)18
(*6.*) 2)24	(*7.*) 2)28	(*8.*) 2)48	(*9.*) 2)46	(*10.*) 2)26
(*11.*) 2)106	(*12.*) 2)108	(*13.*) 2)104	(*14.*) 2)102	(*15.*) 2)124
(*16.*) 2)128	(*17.*) 2)126	(*18.*) 2)184	(*19.*) 2)182	(*20.*) 2)144

21. 146 ÷ 2.
22. 186 ÷ 2.
23. 188 ÷ 2.
24. 122 ÷ 2.
25. 148 ÷ 2.
26. 142 ÷ 2.
27. 128 ÷ 2.
28. 164 ÷ 2.
29. 126 ÷ 2.
30. 162 ÷ 2.
31. 166 ÷ 2.
32. 168 ÷ 2.

33. How many turkeys can be bought for 88 dollars, at 2 dollars each?

34. 2 cows were bought for 84 dollars; what did each cost?

35. How many pigs, at 2 dollars each, can I buy for 124 dollars? For 160 dollars?

36. 124÷2=how many? 46÷2=how many?

37. 2 boys divide 144 marbles equally between them; how many does each get?

38. If 2 pints make a quart, how many quarts in 94 pints? In 188 pints?

39. In a dollar there are 2 halves; how many dollars in 66 halves?

ORAL EXERCISES.

LESSON 64.

3 in 3, once.	4 in 4, once.
3 in 6, twice.	4 in 8, twice.
3 in 9, 3 times.	4 in 12, 3 times.
3 in 12, 4 times.	4 in 16, 4 times.
3 in 15, 5 times.	4 in 20, 5 times.
3 in 18, 6 times.	4 in 24, 6 times.
3 in 21, 7 times.	4 in 28, 7 times.
3 in 24, 8 times.	4 in 32, 8 times,
3 in 27, 9 times.	4 in 36, 9 times.
3 in 30, 10 times.	4 in 40, 10 times.

1. 3 is contained in 15 how many times? 3 in 18? 3 in 6? 3 in 21? 3 in 27?

2. At 4 cents each, how many oranges can you buy for 40 cents?

3. 30 cents are divided equally among 3 boys; how much does each one get?

$3 \div 3 = 1.$	$4 \div 4 = 1.$
$6 \div 3 = 2.$	$8 \div 4 = 2.$
$9 \div 3 = 3.$	$12 \div 4 = 3.$
$12 \div 3 = 4.$	$16 \div 4 = 4.$
$15 \div 3 = 5.$	$20 \div 4 = 5.$
$18 \div 3 = 6.$	$24 \div 4 = 6.$
$21 \div 3 = 7.$	$28 \div 4 = 7.$
$24 \div 3 = 8.$	$32 \div 4 = 8.$
$27 \div 3 = 9.$	$36 \div 4 = 9.$
$30 \div 3 = 10.$	$40 \div 4 = 10.$

WRITTEN EXERCISES.

LESSON 65.

(*1.*) 3)27	(*2.*) 3)24	(*3.*) 3)21	(*4.*) 3)30	(*5.*) 3)12
(*6.*) 4)32	(*7.*) 4)24	(*8.*) 4)20	(*9.*) 4)28	(*10.*) 4)16
(*11.*) 3)276	(*12.*) 3)159	(*13.*) 4)248	(*14.*) 4)240	(*15.*) 3)156
(*16.*) 3)162	(*17.*) 3)195	(*18.*) 4)180	(*19.*) 4)152	(*20.*) 3)306
(*21.*) 3)288	(*22.*) 4)408	(*23.*) 4)276	(*24.*) 4)100	(*25.*) 3)225

26. 303 ÷ 3.
27. 198 ÷ 3.
28. 282 ÷ 3.
29. 159 ÷ 3.
30. 892 ÷ 4.
31. 135 ÷ 3.
32. 288 ÷ 4.
33. 372 ÷ 4.
34. 228 ÷ 3.
35. 675 ÷ 3.
36. 164 ÷ 4.
37. 104 ÷ 4.
38. 332 ÷ 4.
39. 208 ÷ 4.
40. 896 ÷ 4.

41. How many gallons in 496 quarts?

42. In one league there are 3 miles; how many leagues in 519 miles?

43. How many yards in 186 feet?

44. A farmer paid 208 dollars for 4 cows; how much was that apiece?

45. In 3 divisions there are 159 boys; how many is that to a division?

46. A man can walk 3 miles an hour; how many hours will it take him to walk 228 miles?

47. 404 ÷ 4 = how many?

ORAL EXERCISES.

LESSON 66.

5 in 5, once.
5 in 10, twice.
5 in 15, 3 times.
5 in 20, 4 times.
5 in 25, 5 times.
5 in 30, 6 times.
5 in 35, 7 times.
5 in 40, 8 times.
5 in 45, 9 times.
5 in 50, 10 times.

6 in 6, once.
6 in 12, twice.
6 in 18, 3 times.
6 in 24, 4 times.
6 in 30, 5 times.
6 in 36, 6 times.
6 in 42, 7 times.
6 in 48, 8 times.
6 in 54, 9 times.
6 in 60, 10 times.

1. How many times is 5 contained in 20? 5 in 35? 6 in 54? 6 in 24? 5 in 45?

2. $50 \div 5 =$ how many? $60 \div 6$? $35 \div 5$?

3. 54 men are arranged in rows of 6 each; how many rows are there?

4. If 6 oranges cost 30 cents, what will 1 cost?

$5 \div 5 = 1$.
$10 \div 5 = 2$.
$15 \div 5 = 3$.
$20 \div 5 = 4$.
$25 \div 5 = 5$.
$30 \div 5 = 6$.
$35 \div 5 = 7$.
$40 \div 5 = 8$.
$45 \div 5 = 9$.
$50 \div 5 = 10$.

$6 \div 6 = 1$.
$12 \div 6 = 2$.
$18 \div 6 = 3$.
$24 \div 6 = 4$.
$30 \div 6 = 5$.
$36 \div 6 = 6$.
$42 \div 6 = 7$.
$48 \div 6 = 8$.
$54 \div 6 = 9$.
$60 \div 6 = 10$.

WRITTEN EXERCISES.

LESSON 67.

(*1.*) 5)255	(*2.*) 5)105	(*3.*) 6)126	(*4.*) 6)186	(*5.*) 5)205
(*6.*) 5)440	(*7.*) 5)235	(*8.*) 6)438	(*9.*) 5)495	(*10.*) 6)426
(*11.*) 6)196	(*12.*) 6)492	(*13.*) 5)320	(*14.*) 5)480	(*15.*) 6)258
(*16.*) 5)484	(*17.*) 5)422	(*18.*) 5)189	(*19.*) 6)444	(*20.*) 6)318
(*21.*) 5)220	(*22.*) 6)366	(*23.*) 6)249	(*24.*) 5)926	(*25.*) 5)840

26. 322 ÷ 6.
27. 820 ÷ 6.
28. 441 ÷ 5.
29. 829 ÷ 5.
30. 222 ÷ 5.
31. 415 ÷ 5.
32. 954 ÷ 6.
33. 666 ÷ 6.
34. 777 ÷ 6.
35. 123 ÷ 6.
36. 400 ÷ 5.
37. 888 ÷ 6.
38. 820 ÷ 6.
39. 545 ÷ 5.
40. 456 ÷ 6.

41. 128 chestnuts were divided among 5 boys, each receiving the same number; how many did each get, and how many remained?

42. There are 5 cents in a half-dime; how many half-dimes in 425 cents?

43. 504 trees are arranged in rows of 6 each; how many rows are there?

44. If 495 dollars are equally divided among 6 men, how much will each man get, and how many dollars will remain?

ORAL EXERCISES.

LESSON 68.

7 in 7,	once.	8 in 8,	once.
7 in 14,	twice.	8 in 16,	twice.
7 in 21,	3 times.	8 in 24,	3 times.
7 in 28,	4 times.	8 in 32,	4 times.
7 in 35,	5 times.	8 in 40,	5 times.
7 in 42,	6 times.	8 in 48,	6 times.
7 in 49,	7 times.	8 in 56,	7 times.
7 in 56,	8 times.	8 in 64,	8 times.
7 in 63,	9 times.	8 in 72,	9 times.
7 in 70,	10 times.	8 in 80,	10 times.

1. How many times is 7 contained in 49? In 35? In 14? In 21? In 63? In 70?

2. $40 \div 8 =$ how many? $72 \div 8$? $32 \div 8$?

3. 8 lead pencils are sold for 24 cents; how much is that apiece?

4. If 7 primers cost 56 cents, what will 1 cost?

$7 \div 7 = 1$.
$14 \div 7 = 2$.
$21 \div 7 = 3$.
$28 \div 7 = 4$.
$35 \div 7 = 5$.
$42 \div 7 = 6$.
$49 \div 7 = 7$.
$56 \div 7 = 8$.
$63 \div 7 = 9$.
$70 \div 7 = 10$.

$8 \div 8 = 1$.
$16 \div 8 = 2$.
$24 \div 8 = 3$.
$32 \div 8 = 4$.
$40 \div 8 = 5$.
$48 \div 8 = 6$.
$56 \div 8 = 7$.
$64 \div 8 = 8$.
$72 \div 8 = 9$.
$80 \div 8 = 10$.

WRITTEN EXERCISES.

LESSON 69.

(*1.*) 7)147
(*2.*) 7)154
(*3.*) 8)648
(*4.*) 8)541
(*5.*) 7)636
(*6.*) 8)546
(*7.*) 7)321
(*8.*) 8)556
(*9.*) 7)495
(*10.*) 8)808
(*11.*) 7)566
(*12.*) 7)707
(*13.*) 8)991
(*14.*) 8)333
(*15.*) 7)226
(*16.*) 7)335
(*17.*) 8)954
(*18.*) 7)381
(*19.*) 7)665
(*20.*) 8)221
(*21.*) 8)400
(*22.*) 7)300
(*23.*) 8)200
(*24.*) 7)500
(*25.*) 8)900

26. 563 ÷ 8.
27. 123 ÷ 7.
28. 987 ÷ 8.
29. 433 ÷ 8.
30. 666 ÷ 7.
31. 884 ÷ 7.
32. 456 ÷ 7.
33. 654 ÷ 8.
34. 444 ÷ 8.
35. 777 ÷ 7.
36. 214 ÷ 8.
37. 789 ÷ 7.
38. 321 ÷ 8.
39. 555 ÷ 7.
40. 888 ÷ 8.

41. How many pecks in 544 quarts?

42. In 8 companies of soldiers there are 768 men; how many in each company?

43. How many yards of cloth, at 7 dollars a yard, can you buy for 294 dollars?

44. How many weeks in 721 days?

45. 8 men divide 560 dollars equally among themselves; how much does each man get?

46. If a horse travels 8 miles an hour, in how many hours will he travel 120 miles?

ORAL EXERCISES.

LESSON 70.

9 in 9, once.
9 in 18, twice.
9 in 27, 3 times.
9 in 36, 4 times.
9 in 45, 5 times.
9 in 54, 6 times.
9 in 63, 7 times.
9 in 72, 8 times.
9 in 81, 9 times.
9 in 90, 10 times.

10 in 10, once.
10 in 20, twice.
10 in 30, 3 times.
10 in 40, 4 times.
10 in 50, 5 times.
10 in 60, 6 times.
10 in 70, 7 times.
10 in 80, 8 times.
10 in 90, 9 times.
10 in 100, 10 times.

1. 90 ÷ 9 = how many? 90 ÷ 10? 45 ÷ 9? 40 ÷ 10? 30 ÷ 10? 36 ÷ 9? 63 ÷ 9? 100 ÷ 10?

2. For 36 cents how many plates can you buy at 9 cents each?

3. In one dime there are 10 cents; how many dimes in 20 cents? In 50 cents? In 80 cents?

9 ÷ 9 = 1.
18 ÷ 9 = 2.
27 ÷ 9 = 3.
36 ÷ 9 = 4.
45 ÷ 9 = 5.
54 ÷ 9 = 6.
63 ÷ 9 = 7.
72 ÷ 9 = 8.
81 ÷ 9 = 9.
90 ÷ 9 = 10.

10 ÷ 10 = 1.
20 ÷ 10 = 2.
30 ÷ 10 = 3.
40 ÷ 10 = 4.
50 ÷ 10 = 5.
60 ÷ 10 = 6.
70 ÷ 10 = 7.
80 ÷ 10 = 8.
90 ÷ 10 = 9.
100 ÷ 10 = 10.

WRITTEN EXERCISES.

LESSON 71.

(*1.*) 9)153

(*2.*) 9)729

(*3.*) 9)828

(*4.*) 9)467

(*5.*) 9)909

(*6.*) 9)819

(*7.*) 9)436

(*8.*) 9)870

(*9.*) 9)910

(*10.*) 10)800

(*11.*) 10)506

(*12.*) 10)904

(*13.*) 10)109

(*14.*) 10)446

(*15.*) 10)840

(*16.*) 10)830

(*17.*) 10)777

(*18.*) 10)500

(*19.*) 10)480

(*20.*) 10)511

(*21.*) 10)660

(*22.*) 9)660

(*23.*) 9)810

(*24.*) 10)100

(*25.*) 10)590

26. 987 ÷ 10.
27. 654 ÷ 9.
28. 321 ÷ 10.
29. 119 ÷ 10.
30. 246 ÷ 9.
31. 721 ÷ 9.
32. 692 ÷ 9.
33. 843 ÷ 10.
34. 900 ÷ 10.
35. 850 ÷ 9.
36. 662 ÷ 9.
37. 556 ÷ 10.
38. 999 ÷ 9.
39. 892 ÷ 10.
40. 336 ÷ 9.

41. At 9 cents a pound, how much sugar can you buy for 729 cents?

42. How many dimes in 950 cents?

43. A boat sails 9 miles an hour; how long will it be in sailing 126 miles?

44. How many eagles in 456 dollars? How many dollars remaining?

45. If one man can do a piece of work in 189 days, how long will it take 9 men to do it?

46. How many rows of 9 trees each in 261 trees?

ORAL EXERCISES.

LESSON 72.

1. How many times is 2 contained in 8? In 6? In 20? In 18? In 16? In 10?

2. 6 ÷ 3 = how many? 9 ÷ 3? 12 ÷ 3? 15 ÷ 3? 30 ÷ 3? 27 ÷ 3? 18 ÷ 3?

3. 4 is contained in 8 how many times? In 16? In 12? In 20? In 40? In 36?

4. 15 ÷ 5 = how many? 25 ÷ 5? 30 ÷ 5? 45 ÷ 5? 50 ÷ 5? 35 ÷ 5? 20 ÷ 5?

5. How many times is 6 contained in 12? In 18? In 36? In 60? In 54? In 42?

6. 7 is contained in 42 how many times? In 56? In 49? In 21? In 63?

7. 40 ÷ 8 = how many? 48 ÷ 8? 16 ÷ 8? 32 ÷ 8? 56 ÷ 8? 64 ÷ 8? 80 ÷ 8?

8. How many times is 9 contained in 27? In 9? In 63? In 81? In 72?

9. 80 ÷ 10 = how many? 70 ÷ 10? 60 ÷ 10? 30 ÷ 10? 50 ÷ 10? 100 ÷ 10? 90 ÷ 10?

10. How many times is 6 contained in 54? 7 in 63? 8 in 72? 9 in 81? 10 in 90?

11. 24 ÷ 3 = how many? 32 ÷ 4? 40 ÷ 5? 48 ÷ 6? 56 ÷ 7? 64 ÷ 8? 72 ÷ 9?

12. 72 ÷ 9 = how many? 72 ÷ 8? 36 ÷ 4? 36 ÷ 9? 36 ÷ 6? 48 ÷ 6? 48 ÷ 8?

13. 50 ÷ 10 = how many? 50 ÷ 5? 40 ÷ 8? 40 ÷ 5? 24 ÷ 8? 56 ÷ 8? 56 ÷ 7?

WRITTEN EXERCISES.

LESSON 73.

Note.—The examples in this lesson are intended to illustrate the method of shortening the process of division by cutting off the ciphers at the right of the divisor.

(*1.*)	(*2.*)	(*3.*)	(*4.*)
6|0)824|5	70)3314	50)2215	90)4336
(*5.*)	(*6.*)	(*7.*)	(*8.*)
800)33124	600)50012	800)4200	500)50012
(*9.*)	(*10.*)	(*11.*)	(*12.*)
300)62184	400)51660	900)18900	30)4500
(*13.*)	(*14.*)	(*15.*)	(*16.*)
600)12160	500)19870	700)14296	40)16640

17. 84621 ÷ 600.

18. 33210 ÷ 70.

19. 54116 ÷ 800.

20. 55420 ÷ 5000.

21. 44205 ÷ 500.

22. 30016 ÷ 900.

23. 22154 ÷ 60.

24. 433013 ÷ 400.

25. 22160 ÷ 90.

26. 30004 ÷ 8000.

27. 8214000 ÷ 4000.

28. 10000 ÷ 500.

29. If a steamboat runs 10 miles an hour, how long will it take it to go 550 miles?

30. At the rate of 30 miles an hour, how long will it take a locomotive to run 690 miles?

31. There are 2000 pounds in a ton; how many tons in 1768000 pounds?

32. In a dollar there are 100 cents; how many dollars in 268900 cents?

33. At 300 dollars each, how many horses can you buy for 4500 dollars?

ORAL EXERCISES.

LESSON 74.

1. If 5 oranges cost 25 cents, what will one orange cost?

2. Henry paid 42 cents for fish, at 6 cents each; how many did he buy?

3. 56 chestnuts are divided equally among 7 boys; how many does each receive?

4. There are 4 quarts in a gallon; how many quarts in 32 gallons? In 36? In 40?

5. If a man can do a certain amount of work in 72 days, how long will it take 9 men to do it? $72 \div 9 =$ how many?

6. If Mary earns 5 cents a day, how long will it take her to earn 45 cents?

7. If 6 candles weigh a pound, how many pounds will 36 candles weigh?

8. William bought 9 pounds of beef for 72 cents; how much a pound did it cost him?

9. If a family uses 6 pounds of butter in a week, how many weeks will 72 pounds last?

10. A man bought a pair of chickens, weighing 10 pounds, for 1 dollar; how much did they cost him a pound?

11. In a peck there are 8 quarts; how many pecks in 72 quarts? In 16 quarts?

12. A horse requires 4 shoes; how many horses can be shod with 36 shoes?

WRITTEN EXERCISES.

LESSON 75.

(1.) 11)376(
(2.) 12)591(
(3.) 13)556(
(4.) 14)332(
(5.) 15)620(

(6.) 16)623(
(7.) 17)189(
(8.) 18)399(
(9.) 19)436(
(10.) 16)541(

(11.) 18)642(
(12.) 15)531(
(13.) 14)154(
(14.) 13)143(
(15.) 19)209(

(16.) 17)331(
(17.) 16)129(
(18.) 15)138(
(19.) 12)129(
(20.) 14)199(

21. 832 ÷ 12.
22. 630 ÷ 18.
23. 844 ÷ 15.
24. 555 ÷ 15.
25. 950 ÷ 19.
26. 867 ÷ 17.
27. 662 ÷ 15.
28. 720 ÷ 13.
29. 668 ÷ 19.
30. 876 ÷ 18.
31. 900 ÷ 18.
32. 854 ÷ 14.
33. 846 ÷ 15.
34. 921 ÷ 13.
35. 332 ÷ 12.
36. 320 ÷ 16.
37. 662 ÷ 15.
38. 934 ÷ 17.

39. How many books at 18 cents each can be bought for 396 cents?

40. 15 men divided 690 dollars equally among them; how much did each get?

41. There are 16 ounces in a pound; how many pounds in 368 ounces?

42. How many pounds are there in 800 ounces?

43. At 19 cents a pound, how much beef can be bought for 969 cents?

ORAL EXERCISES.

LESSON 76.

1. If a laborer earns 9 dollars in a week, in how many weeks will he earn 81 dollars?

2. A glazier puts 8 panes of glass in one window; how many such windows can he glaze with 72 panes? With 80 panes?

3. Mary divided 25 roses among 5 girls; how many did each receive?

4. A farmer has a box which will hold 10 bushels; how many such boxes will it take to hold 100 bushels?

5. Henry's knife cost 60 cents; how many dimes will it require to pay for it?

6. How many 3-cent pieces are there in 21 cents? In 30 cents? In 24 cents?

7. If one barrel requires 4 hoops, how many hoops will be required for 32 barrels?

8. In a panel of fence there are 5 rails; how many panels can be made from 45 rails? From 50 rails?

9. At 6 cents a pound, how many pounds of soap can be bought for 54 cents?

10. James was detained 30 minutes after school for 6 demerits; how long was that for each demerit?

11. If there are 4 pecks in a bushel, how many bushels are there in 24 pecks?

12. How many gallons in 40 quarts, there being 4 quarts in one gallon?

WRITTEN EXERCISES.

LESSON 77.

(*1.*) 26)918(

(*2.*) 34)569(

(*3.*) 59)690(

(*4.*) 44)900(

(*5.*) 35)1140(

(*6.*) 28)6120(

(*7.*) 36)1214(

(*8.*) 16)8412(

(*9.*) 92)1185(

(*10.*) 84)3612(

(*11.*) 57)5514(

(*12.*) 63)1000(

(*13.*) 55)4500(

(*14.*) 62)1234(

(*15.*) 72)5678(

(*16.*) 54)992(

(*17.*) 85)1111(

(*18.*) 92)1964(

(*19.*) 45)9086(

(*20.*) 35)7066(

21. 3456 ÷ 23.
22. 2200 ÷ 34.
23. 4335 ÷ 45.
24. 6412 ÷ 56.
25. 1000 ÷ 67.
26. 3101 ÷ 25.
27. 2001 ÷ 25.
28. 6441 ÷ 18.
29. 5220 ÷ 26.
30. 3880 ÷ 19.
31. 5200 ÷ 29.
32. 4531 ÷ 53.
33. 2008 ÷ 38.
34. 6312 ÷ 83.
35. 5991 ÷ 29.

36. There are 52 weeks in a year; how many years in 1248 weeks?

37. How many barrels containing 36 gallons each will be required to hold 3708 gallons?

38. In a square mile there are 640 acres; into how many lots of 16 acres each can it be divided?

39. In a certain town there are 1620 school children; how many schools of 45 pupils each will they require?

ORAL EXERCISES.

LESSON 78.

1. 9 sheep were bought for 63 dollars; how much did each cost?

2. Repeat the table of Federal Money.

3. How many dimes in 20 cents? In 30? In 80? In 100?

4. How many dollars in 50 dimes? In 60 dimes? In 80? In 90?

5. How many eagles in 40 dollars? In 30 dollars? In 20 dollars? In 50 dollars?

6. A boy earns 60 dimes in 6 days; how much does he earn in one day?

7. A laborer earns 90 dollars in 9 weeks; what does he earn in one week?

8. Repeat the table of Liquid Measure.

9. How many gallons in 8 quarts? In 10? In 20? In 28? In 36?

10. How many pints in 12 gills? In 20? In 36? In 40? In 4?

11. How many quarts in 4 pints? In 12? In 16? In 20? In 18?

12. At 8 cents a quart, how much milk can be bought for 32 cents?

13. How many pints of cider, at 5 cents a pint, can be bought for 40 cents?

14. How many gallons of wine, costing 2 dollars a gallon, can be bought for 10 dollars?

15. 6 times 5 divided by 10 = how many?

WRITTEN EXERCISES.

LESSON 79.

(1.) 85)9920(

(2.) 69)4430(

(3.) 56)2000(

(4.) 39)8814(

(5.) 121)8416(

(6.) 136)3125(

(7.) 182)3954(

(8.) 160)8824(

(9.) 195)9820(

(10.) 121)6640(

(11.) 150)3450(

(12.) 218)8432(

(13.) 208)4916(

(14.) 255)4413(

(15.) 315)4421(

(16.) 280)6614(

(17.) 314)6006(

(18.) 201)5009(

(19.) 340)8204(

(20.) 211)4880(

21. 63204 ÷ 222.
22. 44106 ÷ 333.
23. 8280 ÷ 462.
24. 44444 ÷ 333.
25. 62184 ÷ 249.
26. 45670 ÷ 345.
27. 59001 ÷ 306.
28. 34560 ÷ 320.
29. 50012 ÷ 543.
30. 31132 ÷ 646.

31. There are 36 inches in a yard; how many yards in 3960 inches?

32. In one year there are 365 days; how many years in 82251 days? How many days over?

33. How many barrels of flour in 49000 pounds, if one barrel contains 196 pounds?

34. At 250 dollars an acre, how much land can be bought for 62500 dollars?

35. Divide 10001 by 101.

ORAL EXERCISES.

LESSON 80.

1. Repeat the table of Dry Measure.

2. How many quarts in 6 pints? In 10? In 12? In 20? In 18?

3. How many pecks in 16 quarts? In 32? In 56? In 64? In 80?

4. How many bushels in 16 pecks? In 32? In 40? In 36? In 28?

5. How many pints in 16 gills? In 12? In 20? In 32? In 36? In 40?

6. If 4 pints of strawberries cost 40 cents, what will one pint cost?

7. If 7 quarts of currants can be bought for 56 cents, what must you pay for one quart?

8. Repeat the table of Avoirdupois Weight.

9. How many barrels of salt in 45 bushels, if there are 5 bushels in a barrel?

10. How many tons of coal, at 8 dollars a ton, can be bought for 40 dollars?

11. If 10 pounds of sugar cost 90 cents, what will one pound cost?

12. A man paid 60 dollars for 5 tons of hay; what did one ton cost him?

13. If two ounces of smoking tobacco cost 20 cents, what will one ounce cost?

14. If three pounds of buckwheat cost 15 cents, what will one pound cost?

15. 3 times 10 divided by 6 = how many?

WRITTEN EXERCISES.

LESSON 81.

1. How many pounds in 1846 ounces?

2. How many tons in 11650 pounds?

3. If a bushel of wheat weighs 60 pounds, how many bushels are there in 1575 pounds?

4. In a ton of hay there are 2000 pounds; how many tons are there in 400000 pounds?

5. A cord of wood contains 128 solid feet; how many cords are there in 2560 solid feet?

6. How many times are 145 pounds contained in 9840 pounds?

7. If 640 acres of land are divided into farms of 80 acres each, how many farms will there be?

8. In a mile there are 1760 yards; if telegraph poles are placed 55 yards apart, how many will it take to extend that distance?

9. If a locomotive runs 38 miles an hour, how long will it take to go from New York to Washington, if the distance is 228 miles?

10. A drover bought a lot of horses for 16975 dollars, paying 125 dollars apiece; how many horses did he buy?

11. How many times are 160 yards contained in 1760 yards?

12. In a barrel of salt there are 280 pounds; how many barrels in 56000 pounds?

13. Divide 25650 by 125.

14. Divide 78964 by 303.

REVIEW PROBLEMS.

ORAL EXERCISES.

LESSON 82.

1. James had 6 marbles, his brother gave him 5 more, and he then lost 4; how many had he left?

2. $6 + 5 - 4 =$ how many?

3. Eddie's father gave him 10 cents, and his mother gave him 5 more; he then bought a top for 3 cents; how much money had he left?

4. $10 + 5 - 3 =$ how many?

5. $4 + 3 + 5 - 6 =$ how many?

6. If I buy 5 boxes of berries, each containing 2 pints, what do they cost me at 5 cents a pint?

7. $5 \times 2 \times 5 =$ how many?

8. A house contains 5 rooms; in each room there are 2 windows, and in each window 8 panes of glass; how many panes are there in all?

9. $5 \times 2 \times 8 =$ how many?

10. Horace had 12 chestnuts, and lost 3; he then divided the rest equally among 3 boys; how many did each boy receive?

11. If I buy a slate for 12 cents, a lead pencil for 5 cents, and a ruler for 6 cents, how much change should I have left from a quarter of a dollar?

12. $9 \times 4 \div 6 =$ how many?

13. Bought 6 cents' worth of marbles at 4 for a cent, and divided them equally among 8 boys; how many did each receive?

TABLE CARD.

TROY WEIGHT.

24 grains . . = 1 pennyw't.
20 pennyweights = 1 ounce.
12 ounces . . = 1 pound.

AVOIRDUPOIS WEIGHT.

16 drams . . = 1 ounce.
16 ounces . . = 1 pound.
25 pounds . . = 1 quarter.
4 quarters, or 100 lbs. . = 1 hundred-w't.
20 hundred-w't. = 1 ton.

In several States 112 lbs. are allowed for a hundred-w't. and 28 lbs. for a quarter.

LONG MEASURE.

12 inches . . = 1 foot.
3 feet . . . = 1 yard.
5½ yards . . = 1 rod.
40 rods . . = 1 furlong.
8 furlongs . = 1 mile.
60 geographic, or 69⅙ statute miles = 1 degree.
360 degrees = 1 circle of the earth.
6 feet . . . = 1 fathom.
$7\frac{92}{100}$ inches . = 1 link.
4 rods, or 100 links = 1 chain.
$1\frac{15}{100}$ miles . = 1 knot.

SQUARE MEASURE.

144 sq. inches = 1 square foot.
9 square feet = 1 square yard.

CUBIC MEASURE.

1728 cu. inches = 1 cubic foot.
27 cubic feet = 1 cubic yard.
40 feet of round, or 50 feet of hewn timber = 1 ton.
16 cubic feet =1 cord foot.
128 cubic feet =1 cord of wood.

FEDERAL MONEY.

10 mills . . = 1 cent.
10 cents . . = 1 dime.
10 dimes . . = 1 dollar.
10 dollars . . = 1 eagle.

STERLING MONEY.

4 farthings . = 1 penny.
12 pence . = 1 shilling.
20 shillings . $4.84 (gold) . = 1 pound.

18 cents 6 mills = 1 franc.

CIRCULAR MEASURE.

60 seconds . = 1 minute.
60 minutes . = 1 degree.
30 degrees . = 1 sign.
12 signs . = 1 circle.

TIME.

60 seconds . = 1 minute.
60 minutes . = 1 hour.
24 hours . . = 1 day.
7 days . . . = 1 week.
4 weeks . . = 1 lunar month.
12 calendar, or 13 lunar months and 1 day, or 365 days, = 1 civil year.
366 days . . = 1 leap year.
100 years . . = 1 century.

WINE MEASURE.

4 gills . . . = 1 pint.
2 pints . . . = 1 quart.
4 quarts . . = 1 gallon.
31½ gallons . = 1 barrel.
63 gallons . = 1 hogshead.

DRY MEASURE.

2 pints . . . = 1 quart.
8 quarts . . = 1 peck.
4 pecks . . = 1 bushel.
8 bushels . . = 1 quarter.
32 bushels . . = 1 chaldron.

MISCELLANEOUS.

12 units . . = 1 dozen.
12 dozen . . = 1 gross.
20 units . . = 1 score.
56 pounds . . = 1 bu. of corn.
100 pounds . = 1 quintal.
196 pounds . = 1 barrel flour.
200 pounds . = 1 barrel pork.
24 sheets of paper = 1 quire.
20 quires of paper = 1 ream.

MULTIPLICATION TABLE.

Twice 1 are	2	3 times 1 are	3	4 times 1 are	4	5 times 1 are	5	6 times 1 are	6	7 times 1 are	7	8 times 1 are	8	9 times 1 are	9	10 times 1 are	10	11 times 1 are	11	1[illegible] 1	[illegible]
2	4	2	6	2	8	2	10	2	12	2	14	2	16	2	18	2	20	2	22	2	[illegible]
3	6	3	9	3	12	3	15	3	18	3	21	3	24	3	27	3	30	3	33	3	[illegible]
4	8	4	12	4	16	4	20	4	24	4	28	4	32	4	36	4	40	4	44	4	[illegible]
5	10	5	15	5	20	5	25	5	30	5	35	5	40	5	45	5	50	5	55	5	[illegible]
6	12	6	18	6	24	6	30	6	36	6	42	6	48	6	54	6	60	6	66	6	[illegible]
7	14	7	21	7	28	7	35	7	42	7	49	7	56	7	63	7	70	7	77	7	[illegible]
8	16	8	24	8	32	8	40	8	48	8	56	8	64	8	72	8	80	8	88	8	[illegible]
9	18	9	27	9	36	9	45	9	54	9	63	9	72	9	81	9	90	9	99	9	[illegible]
10	20	10	30	10	40	10	50	10	60	10	70	10	80	10	90	10	100	10	110	10	[illegible]
11	22	11	33	11	44	11	55	11	66	11	77	11	88	11	99	11	110	11	121	11	[illegible]
12	24	12	36	12	48	12	60	12	72	12	84	12	96	12	108	12	120	12	132	12	[illegible]
13	26	13	39	13	52	13	65	13	78	13	91	13	104	13	117	13	130	13	143	13	156
14	28	14	42	14	56	14	70	14	84	14	98	14	112	14	126	14	140	14	154	14	168
15	30	15	45	15	60	15	75	15	90	15	105	15	120	15	135	15	150	15	165	15	180
16	32	16	48	16	64	16	80	16	96	16	112	16	128	16	144	16	160	16	176	16	192
17	34	17	51	17	68	17	85	17	102	17	119	17	136	17	153	17	170	17	187	17	204
18	36	18	54	18	72	18	90	18	108	18	126	18	144	18	162	18	180	18	198	18	216
19	38	19	57	19	76	19	95	19	114	19	133	19	152	19	171	19	190	19	209	19	228
20	40	20	60	20	80	20	100	20	120	20	140	20	160	20	180	20	200	20	220	20	240
21	42	21	63	21	84	21	105	21	126	21	147	21	168	21	189	21	210	21	231	21	252
22	44	22	66	22	88	22	110	22	132	22	154	22	176	22	198	22	220	22	242	22	264
23	46	23	69	23	92	23	115	23	138	23	161	23	184	23	207	23	230	23	253	23	276
24	48	24	72	24	96	24	120	24	144	24	168	24	192	24	216	24	240	24	264	24	288

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